Crisil
Intelligence

Report on Indian Coal Mining Industry

August 2026



Crisil Limited
MUMBAI

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Abbreviations

Abbreviation	Full Form
ACQ	Annual Contracted Quantity
AI	Artificial Intelligence
AMS	Automatic Mechanical Sampler
APMDC	Andhra Pradesh Mineral Development Corporation
BE	Budget Estimate
BMT	Billion Metric Tonnes
BOBRN	Bottom Open Bottom Rapid Discharge Wagon
Bt	Billion Tonnes
BU	Billion Units
CAGR	Compound Annual Growth Rate
CAPEX	Capital Expenditure
CBA	Coal Bearing Areas (Acquisition and Development) Act
CBM	Coal Bed Methane
CCO	Coal Controller's Organisation
CEA	Central Electricity Authority
CMM	Coal Mine Methane
CMPDIL	Central Mine Planning & Design Institute Limited
CMSP	Coal Mines (Special Provisions)
COP26	26th Conference of Parties
CPP	Captive Power Plant
CSR	Corporate Social Responsibility
CSR (Coal Quality)	Coke Strength after Reaction
CTO	Consent to Operate
CUF	Capacity Utilisation Factor
CY	Calendar Year
DGMS	Directorate General of Mines Safety
DGCIS	Directorate General of Commercial Intelligence and Statistics
DMF	District Mineral Foundation
DPE	Department of Public Enterprises
DRI	Direct Reduced Iron
DSCR	Debt Service Coverage Ratio
ECL	Eastern Coalfields Limited
EC	Environmental Clearance
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization
EFC	Evacuation Facility Charge
EIA (Report)	Environmental Impact Assessment
EIA (Authority)	Energy Information Administration
EJ	Exajoule

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Abbreviation	Full Form
EMS	Excess Moisture Settlement
EPS	Electric Power Survey / Earnings Per Share (context-specific)
ERP	Enterprise Resource Planning
ESG	Environmental, Social and Governance
EV	Electric Vehicle
FAE	First Advance Estimates
FC	Forest Clearance
FDI	Foreign Direct Investment
FMC	First Mile Connectivity
FOIS	Freight Operations Information System
FRE	First Revised Estimates
FSA	Fuel Supply Agreement
FSI	Free Swelling Index
FY	Fiscal Year
GCV	Gross Calorific Value
GDP	Gross Domestic Product
GENCOS	Generation Companies
GIS	Geographic Information System
GMDC	Gujarat Mineral Development Corporation
GNI	Gross National Income
GoI	Government of India
GPWIS	General Purpose Wagon Investment Scheme
GPS	Global Positioning System
GPRS	General Packet Radio Service
GSI	Geological Survey of India
GST	Goods and Services Tax
GVA	Gross Value Added
GW	Gigawatt
GWh	Gigawatt Hour
HDI	Human Development Index
HEMM	Heavy Earth Moving Machinery
HIRA	Hazard Identification and Risk Assessment
H1	First Half
IBM	Indian Bureau of Mines
IBEF	India Brand Equity Foundation
ICCC	Integrated Command and Control Centre
ICI	Index of Core Industries
IEA	International Energy Agency
IMF	International Monetary Fund
IIP	Index of Industrial Production

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Abbreviation	Full Form
IPP	Independent Power Producer
JORC	Joint Ore Reserves Committee
kWh	Kilowatt Hour
LATC	Loading and Additional Transportation Charges
LPI	Logistics Performance Index
M.Cum	Million Cubic Meter
MDO	Mine Developer and Operator
MGR	Merry-Go-Round Railway System
MMDR Act	Mines and Minerals (Development and Regulation) Act
MoC	Ministry of Coal
MoRTH	Ministry of Road Transport and Highways
MoSPI	Ministry of Statistics and Programme Implementation
MSTC	Metal Scrap Trade Corporation Limited
MT	Million Tonnes
MTPA	Million Tonnes Per Annum
MTY	Million Tonnes Per Year
NABL	National Accreditation Board for Testing and Calibration Laboratories
NAV	Net Asset Value
NCI	National Coal Index
NEP	National Electricity Plan
NMET	National Mineral Exploration Trust
NMP	National Monetization Pipeline
NNL	Net National Income
NRS	Non-Regulated Sector
NSO	National Statistical Office
NTPC	National Thermal Power Corporation
OB	Overburden
OBR	Overburden Removal
OC	Opencast
OMS	Output per Manshift
PAT	Profit After Tax
PBT	Profit Before Tax
PE	Provisional Estimate
PHMP	Principal Hazard Management Plan
PIB	Press Information Bureau
PLI	Production Linked Incentive
PLF	Plant Load Factor
PMI	Purchasing Managers' Index
PPA	Power Purchase Agreement
PSU	Public Sector Undertaking

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Abbreviation	Full Form
QCI	Quality Council of India
R&R	Rehabilitation and Resettlement
REE	Rare Earth Elements
RBI	Reserve Bank of India
RFID	Radio Frequency Identification
RLS	Rapid Loading System
RoCE	Return on Capital Employed
RoM	Run of Mine
RoNW	Return on Net Worth
RP	Representative Price
RSR	Rail-Sea-Rail
SAP	Systems, Applications and Products (ERP software)
SHAKTI	Scheme for Harnessing and Allocating Koyala Transparently in India
SMP	Safety Management Plan
SPV	Special Purpose Vehicle
SR	Stripping Ratio
SWCS	Single Window Clearance System
T&D	Transmission and Distribution
TARP	Trigger Action Response Plan
TES	Total Energy Supply
TPP	Thermal Power Plant
TWh	Terawatt Hour
UG	Underground
UN	United Nations
USA	United States of America
USP	Unique Selling Proposition
VGF	Viability Gap Funding
WIPS	Women in Public Sector
YoY	Year-on-Year

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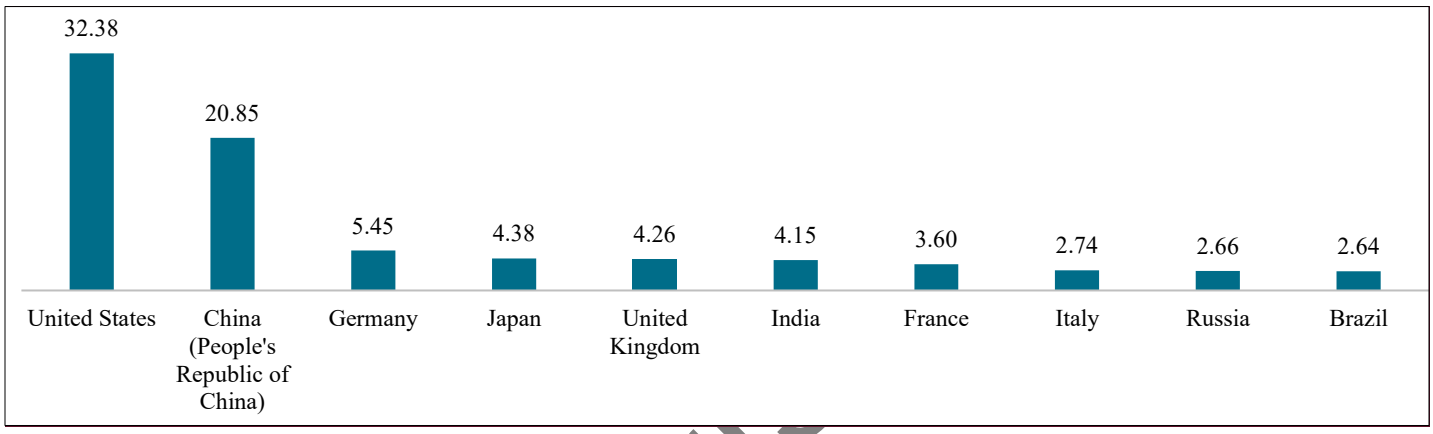
1. Indian Macroeconomic overview

1.1. World economy and Indian Economy Snapshot

India's position among the major economies of the world

India is among the most dynamic and rapidly expanding economies globally. According to IMF estimates, in 2025, India overtook Japan to become the world's fourth-largest economy by nominal Gross Domestic Product (GDP), reaching a size of approximately US$4.18 trillion. Due to exchange rate fluctuations, India's ranking in 2026 is projected to moderate, with the country expected to be the sixth-largest economy by nominal GDP, following the United States, China, Germany, Japan, and the United Kingdom. India continues to hold its position as the fastest-growing major economy, significantly outperforming both advanced and emerging market peers. The growth for 2026 and 2027 is projected at 6.5% per annum, which is expected to keep India ahead of other major economies.[1]

Figure 1.1 Gross domestic product (Nominal GDP) of top 10 economies for 2026 (US$ trillion)

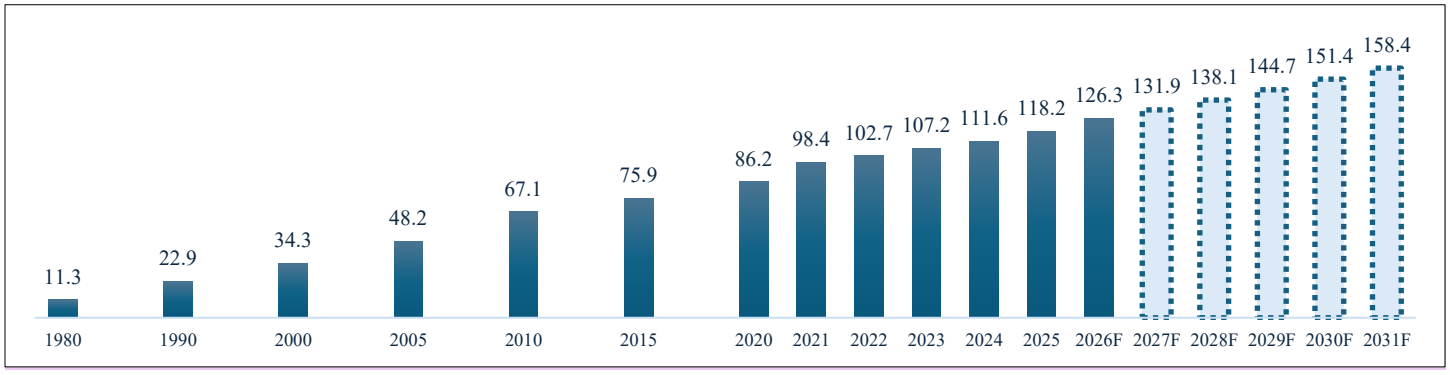


Source: International Monetary Fund (IMF) – World Economic Outlook (April 2026)

World economy

The global economy, as measured by the International Monetary Fund (IMF), has reached a significant milestone, crossing the US$100 trillion mark (nominal) in 2022. This represents a significant increase from US$25 trillion mark in 1992 and US$50 trillion mark in 2006, which is approximately doubling in every 15 years. As per the IMF's World Economic Outlook (April 2026), the global GDP is forecasted to grow from US$126.3 trillion in 2026 to US$158.4 trillion by 2031, at a CAGR of 4.60% underscoring the optimistic outlook for the world economy over the medium term.

Figure 1.2 World Nominal GDP from 1980 to 2025 and forecast till 2031 in trillion US dollars



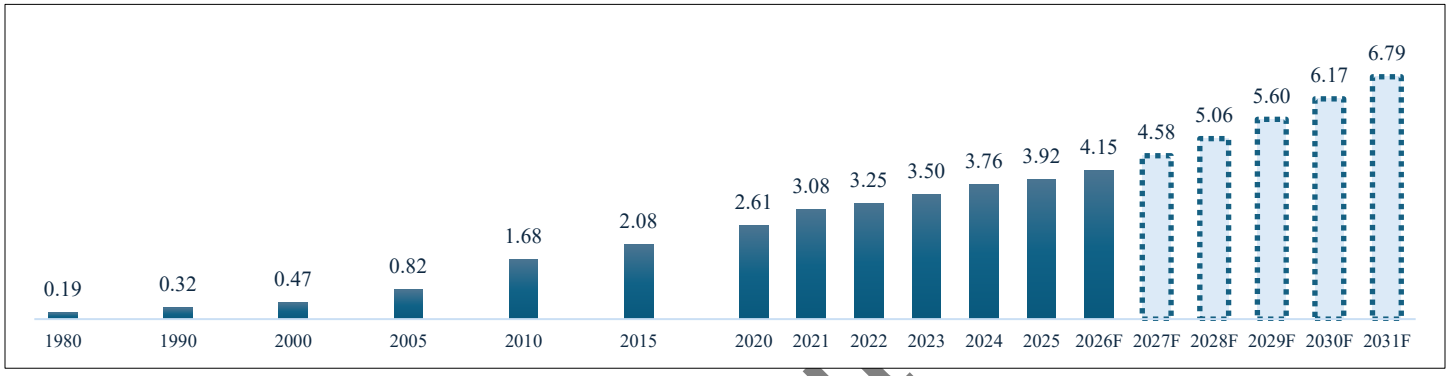
Source: International Monetary Fund (IMF) – World Economic Outlook (April 2026), GDP at current price; Note: F- forecast

[1] *As per: International Monetary Fund (IMF) – World Economic Outlook (April 2026)*

Indian economy

Since the landmark liberalization reforms of 1991, India's economy has witnessed a profound structural transformation, ushering in an era of sustained and accelerated growth. India's economic expansion has been remarkable when viewed over a longer horizon- from a modest nominal GDP of approximately US$0.19 trillion in 1980, the economy grew to US$0.32 trillion in 1990, US$0.47 trillion in 2000, crossed the US$1 trillion threshold in 2007, doubled to US$ 2 trillion by 2014, and further scaled up to US3.92 trillion in 2025, positioning it as the world's sixth-largest economy. This trajectory was underpinned by progressive deregulation, deepening integration with the global economy, and a widening domestic consumption base. Looking ahead, the International Monetary Fund's (IMF) World Economic Outlook (April 2026) projects continued robust expansion, with India's nominal GDP forecasted to rise from US$4.15 trillion in 2026 to approximately US$6.79 trillion by 2031, translating into a CAGR of ~10.3% over the five-year period.

Figure 1.3 India Nominal GDP (Current Prices) from 1980 to 2025 and forecast till 2031 in trillion US dollars

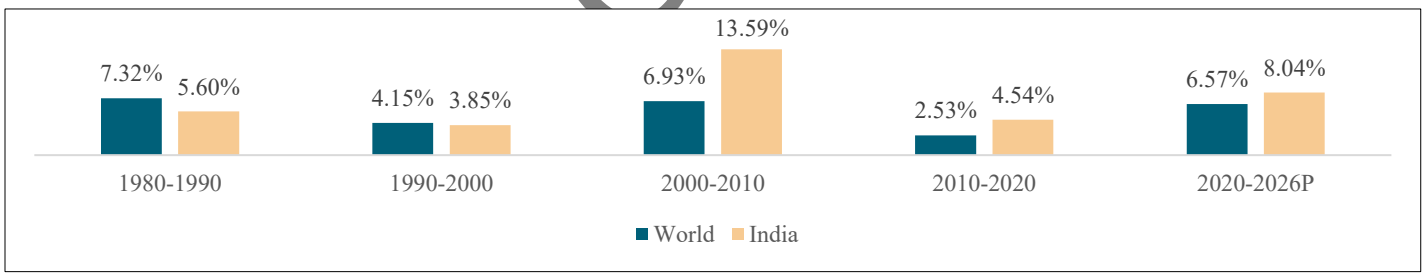


Source: International Monetary Fund (IMF) – World Economic Outlook (April 2026); Note: F- forecast

GDP growth rate of India

A notable shift has occurred in the GDP growth rates of India and the world over the past few decades. Since 2000 to 2010, India's GDP growth rate has surpassed that of the world, with India's growth rate accelerating to 13.60% (CAGR) while the world GDP growth rate was at 6.93% (CAGR) and this trend has persisted to the present solidifying India's position as a driver of global economic growth.

Figure 1.4 Comparison of Nominal GDP growth rates between India and World



Source: International Monetary Fund (IMF) – World Economic Outlook (April 2026); P- Projected

1.2. Real GDP growth in India compared to the world's major economies[2]

According to the IMF's World Economic Outlook (April 2026), the global economy contracted by 2.8% in 2020 due to the COVID-19 pandemic. This was followed by a robust recovery, with real global GDP expanding by 6.7% in 2021, 3.8% in 2022, 3.3% in 2023, 3.4% in 2024 and 2025, and projected to expand by 3.1% in 2026. Looking further ahead, the IMF projects global real GDP growth to remain steady at 3.2% in 2027 and 2028, reflecting the resilience of the United States and several large emerging market and developing economies, as well as continued fiscal support measures in China. The IMF notes that while the global economy has shown considerable resilience, growth remains below the historical average, and downside risks persist due to ongoing geopolitical tensions, tighter financial conditions, and trade fragmentation.

[2] *Note: All years in this section are calendar years unless otherwise mentioned*

Table 1.1 Country-wise real GDP data (annual % change)

Real GDP	2020	2021	2022	2023	2024	2025	2026P	CAGR% 2020-2026
World	(2.7)%	6.7%	3.8%	3.3%	3.4%	3.4%	3.1%	3.0%
US	(2.1)%	6.2%	2.5%	2.9%	2.8%	2.1%	2.3%	2.4%
China	2.3%	8.6%	3.1%	5.4%	5.0%	5.0%	4.4%	4.8%
Euro area	(6.0)%	6.4%	3.6%	0.4%	0.9%	1.4%	1.1%	1.1%
Japan	(4.3)%	3.6%	1.3%	0.7%	(0.2)%	1.2%	0.7%	0.4%
UK	(10.0)%	8.5%	5.1%	0.3%	1.1%	1.3%	0.8%	0.9%
India	(5.8)%	9.7%	7.6%	7.2%	7.1%	7.6%	6.5%	5.6%

Source: IMF – World Economic Outlook (April 2026); Note: P- Projected

1.3. Key drivers of India's GDP growth through Fiscal 2031

India remains the fastest-growing major economy globally and is positioned to transition from the world's sixth-largest economy in 2026 to the third largest by 2031. Driven by structural economic reforms, sustained capital expenditure, rapid industrialisation, and strong domestic demand, India's real GDP is projected to grow at CAGR of 6.5% between 2026 and 2031. To sustain its growth India has formulated a multi-pronged growth strategy anchored by a massive public capital expenditure program, structural manufacturing reforms, and a robust services export engine.

- Historical Growth: Capital expenditure quadrupled from ₹2.63 trillion in Fiscal 2018 to ₹9.5 trillion in Fiscal 2024.
- Recent Allocations: Capex was scaled up to ₹11.21 trillion in Fiscal 2026 (Budget Estimates)
- Fiscal 2027 Outlook: In the Union Budget Fiscal 2027, the GoI proposed a further 9% increase in public capital expenditure, allocating a record ₹12.2 trillion.[3] This sustained capex thrust continues to act as a primary catalyst for industrial, construction, and core sector demand.

1.4.1 Manufacturing and Mining

The industrial sector has emerged as a key growth engine, demonstrating structural resilience despite global supply chain disruptions.

Table 1.2 Real Gross Value Added (GVA) Growth of Industrial Segments (YoY % Change)

Sector	2023	2024	2025 (PE)	2026 (FAE)
Manufacturing	(1.7)%	12.3%	4.5%	7.0%
Mining & Quarrying	3.4%	3.2%	2.7%	(0.7)%
Overall Industry GVA	0.0%	11.0%	4.5%	5.8%

Source: Ministry of Statistics and Programme Implementation (MoSPI), Economic Survey 2025-26;
Note: PE – Provisional Estimates; FAE – First Advance Estimates; all years are fiscal year

Key Trends & Drivers:

- Manufacturing Momentum: Manufacturing GVA growth rebounded strongly to 7.0% in Fiscal 2026 (up from 4.5% in Fiscal 2025), driven by robust domestic demand and improving capacity utilization[4]. High-frequency indicators, such as the Manufacturing PMI (averaging over 56–58 in late 2025), signal sustained expansion.
- Policy Catalyst (PLI & NMM): The Production Linked Incentive (PLI) schemes across 14 strategic sectors have attracted over ₹2.0 trillion in actual investments, generating incremental production/sales exceeding ₹18.7 trillion and creating over 1.26 million jobs as of late 2025[5]. Furthermore, the National Manufacturing Mission (NMM) aims to elevate manufacturing's share of GDP to 25% by 2035.[6]
- Mining & Coal Production: While the broader Mining & Quarrying sector GVA contracted slightly by 0.7% in Fiscal 2026 due to unseasonal monsoon disruptions in H1[7], India's domestic coal production scaled historic heights. Domestic coal output reached

[3] *https://www.pib.gov.in/PressNoteDetails.aspx?NoteId=157180&ModuleId=3&reg=3&lang=1*
[4] *https://www.pib.gov.in/PressReleasePage.aspx?PRID=2219912&reg=3&lang=1*
[5] *https://www.pib.gov.in/PressReleasePage.aspx?PRID=2220800&lang=2&reg=3*
[6] *https://www.ibef.org/industry/manufacturing-sector-india*
[7] *Economic survey 2025-26, Demand and Supply side drivers of growth*

1.05 billion tonnes in Fiscal 2025, representing a 10% average annual growth rate over the preceding five years. Coal production is projected to remain above 1 billion tonnes in Fiscal 2026 to meet the surging baseload power demands of the industrial sector.

1.4.2 Infrastructure

Public-sector capital allocation has fundamentally upgraded India's physical and digital connectivity, lowered logistics costs and boosting economic efficiency.

- Roads and Highways: India's road network is now the second largest globally, spanning over 6.37 million km. The National Highway (NH) network expanded by approximately 61% to 146,552 km as of Fiscal 2026 (up from 91,287 km in Fiscal 2014)[8]. However, the daily construction pace peaked at 34 km/day in Fiscal 2024 has moderated to 25– 27 km/day in Fiscal 2026 due to land acquisition bottlenecks and a shift toward complex greenfield expressways[9]
- Railways Expansion: Capital spending on railways has reached unprecedented levels, with the Union Budget Fiscal 2027 allocating ₹2.93 trillion for railway capex (a 10.5% increase over Fiscal 2026 Revised Estimates). Investments are heavily focused on new-line construction, track doubling, and gauge conversion.[10]
- Logistics & Innovation Rankings: Reflecting these hard infrastructure improvements and supply chain digitization, India ranked 38th in the World Bank's Logistics Performance Index (LPI) and climbed to 38th in the Global Innovation Index (GII) in 2025 (up from 66th in 2019)[11]
- Clean Energy & Asset Monetization: Between 2014 and 2025, India's clean energy sector attracted over ₹8.5 trillion in new investments.[12] Simultaneously, the National Monetization Pipeline (NMP) continues to unlock capital, targeting an asset monetization potential of ₹6.0 trillion.[13]

1.4.3 Services

The services sector remains the cornerstone of India's economy, driven by strong growth, resilience, and deeper integration into global digital value chains. The sector is estimated to have grown by 9.1% in Fiscal 2026, with its contribution to GVA reaching a record 56.4%, highlighting the increasing importance of modern and digitally delivered services. India has emerged as the world's seventh-largest exporter of services, with exports projected to rise to US$ 465-475 billion in Fiscal 2026 from US$ 387 billion in Fiscal 2025, supported by software and professional services[14]. The sector also continues to attract the largest share of foreign investment, accounting for an average of 80.2% of total FDI inflows between Fiscal 2023 and Fiscal 2025[15]. Additionally, residential real estate sales across major cities have reached decadal highs, while the tourism and hospitality sector is expected to approach US$ 60 billion by 2028, aided by rising travel demand and domestic air traffic that is projected to more than double by 2030, reinforcing the sector's role as a key engine of economic growth[16].

Crisil

1.4. Indian gross domestic product (GDP) trends and sectoral growth[17]

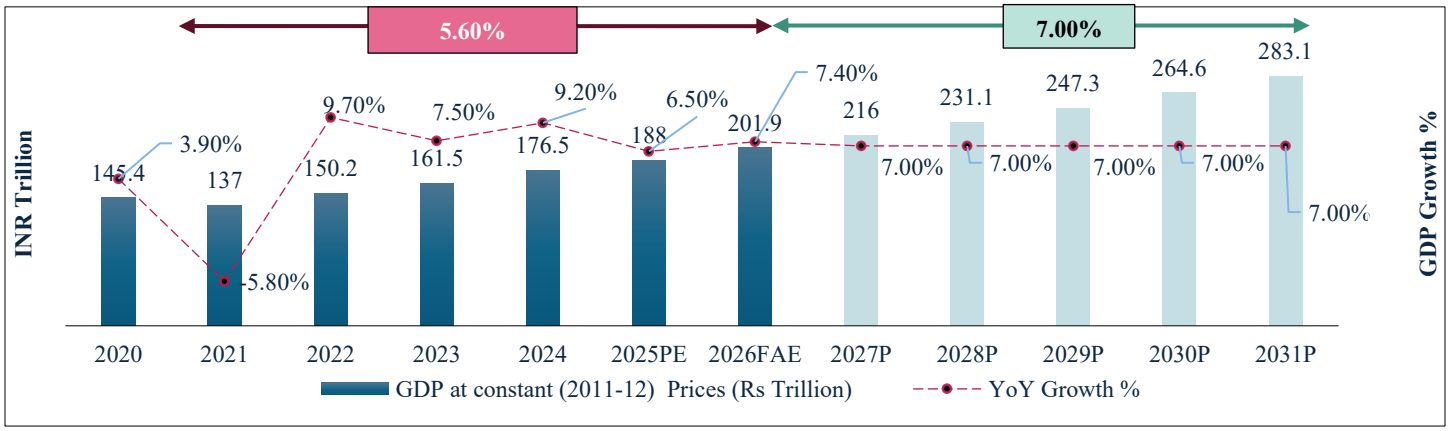
1.5.1 Review of India's real GDP growth over fiscals 2020-2026 and outlook for 2026-2031

The fastest growing among major economies, as of 2025, India ranks as the sixth-largest economy in the world in nominal GDP terms[18]. As per data published by the National Statistical Office (NSO), Real GDP has been estimated to grow by 7.4% in Fiscal 2026 against the growth rate of 6.5% during Fiscal 2025. In absolute terms real GDP at constant prices is estimated to attain a level of ₹201.9 trillion

[8] *https://www.pib.gov.in/PressNoteDetails.aspx?NoteId=154624&ModuleId=3&reg=48&lang=2*
[9] *https://www.careratings.com/uploads/newsfiles/1774854727_Indian%20Road%20Sector.pdf*
[10] *https://prsindia.org/budgets/parliament/demand-for-grants-2026-27-analysis-railways*
[11] *https://www.pib.gov.in/PressReleasePage.aspx?PRID=2220800&lang=2&reg=3*
[12] *https://www.pib.gov.in/PressReleasePage.aspx?PRID=2233832&reg=3&lang=2*
[13] *NITI Aayog: National Monetization pipeline 2.0*
[14] *IBEF: Service industry report (Feb 2026)*
[15] *https://www.pib.gov.in/PressReleasePage.aspx?PRID=2219907&reg=3&lang=1*
[16] *https://www.pib.gov.in/PressReleasePage.aspx?PRID=2219907&reg=3&lang=1*
[17] *Data as per Indian authorities for financial year basis*
[18] *According to the International Monetary Fund's ("IMF") World Economic Outlook (April 2026).*

in Fiscal 2026, against the Provisional Estimates (PE) of ₹188.0 trillion for the Fiscal 2025, registering a growth rate of 7.4%. Nominal GDP or GDP at Current Prices is estimated to attain a level of ₹357.1 trillion in Fiscal 2026, against ₹330.7 trillion in Fiscal 2025, showing a growth rate of 8.0%.[19]

Figure 1.5 India's real GDP trend and outlook (at constant 2011-12 prices)



Source: National Statistical Office (NSO), CRISIL Intelligence
PE: Provisional Estimate, FAE: First Advance Estimate, P: Projected; All years are fiscal years

1.5.3 Index of Eight Core Industries

The Index of Eight Core Industries (ICI), compiled and released by the Office of the Economic Adviser, Ministry of Commerce and Industry, serves as a lead indicator of industrial health, representing 40.27% of the total weight of items included in the Index of Industrial Production (IIP). The Index of eight core industries serves as a key indicator of a country's overall economic health, influencing industrial and economic performance. It has a multiplier effect on the entire economy, with core industries like steel, cement, and electricity being crucial for infrastructure development. This multiplier effect is reinforced by coal's role as a key input fuel across the sector - thermal power generation, clinker production, and blast furnace operations all depend on coal, linking its supply and pricing dynamics to the broader performance of these industries.

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Table 1.3 Summary of the Index of eight core industries (Index)

Sectors	Weight in overall IIP	2021	2022	2023	2024	2025	2026P	CAGR 2021-26
Cement	2.16%	130	156.9	170.6	185.7	197.4	214.6	10.54%
Coal	**4.16%**	**131.1**	**142.3**	**163.5**	**182.7**	**192**	**191.1**	**7.83%**
Crude oil	3.62%	80.1	77.9	76.6	77.1	75.4	73.3	(1.76)%
Electricity	8.00	157.6	170.1	185.2	198.3	208.6	210.7	5.98%
Fertilizers	1.06%	111.6	112.4	125.1	129.8	133.5	133.4	3.63%
Natural gas	2.77%	59.8	71.3	72.4	76.8	75.9	73.8	4.30%
Petroleum refinery products	11.29%	114.9	125.1	131.2	135.9	139.7	139.6	3.97%
Steel	7.22%	139.4	163	178.1	200.4	214.1	234.5	10.96%
Combined Index (Base year 2011-2012)	**40.27%**	**123.2**	**136.1**	**146.7**	**157.8**	**164.9**	**169.4**	**6.58%**

Source: Ministry of Commerce & Industries, all years are fiscal years; P-Provisional

[19] *India follows financial year April 1 to March 31. Hence, the data published by the Indian government/ RBI/NSO is different from that of the IMF, which publishes data as per the calendar year- January 1 to December 31.*

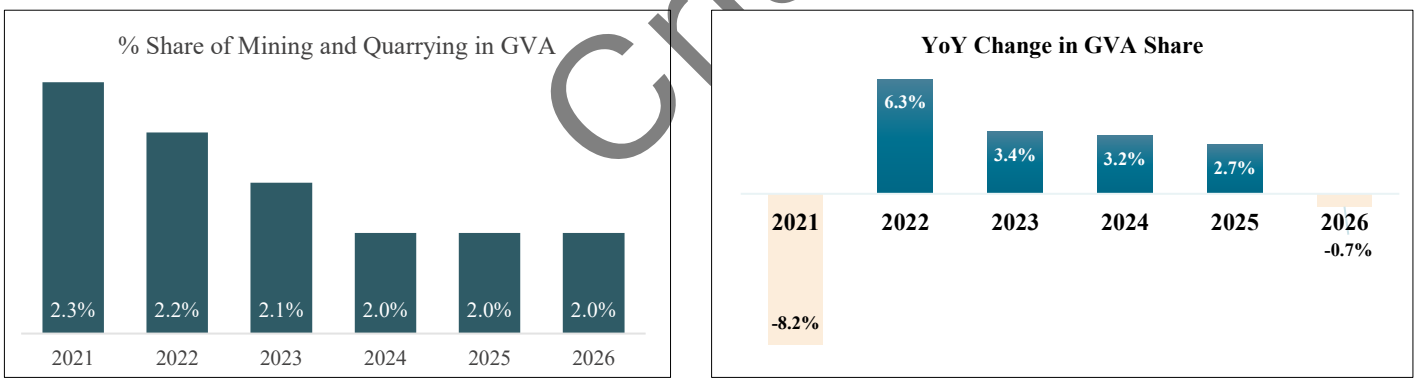
Within the core basket, the coal sector (which holds a significant 10.33% weight in ICI and 4.15% in IIP), experienced a marginal contraction of 0.5% in Fiscal 2026, compared to a robust expansion of 5.1% in Fiscal 2025. While the growth rate experienced a minor consolidation, this trend must be analyzed through a structural and operational lens-

- High Base Effect: The marginal 0.5% contraction in Fiscal 2026 follows consecutive years of record-breaking domestic production. In Fiscal 2025, India's domestic coal production crossed the historic milestone of 1.05 billion tonnes. Maintaining output near these peak absolute levels represents a highly resilient performance rather than a structural decline.
- Monsoon-Related Disruptions: The minor dip in the cumulative index was primarily driven by operational headwinds in the first half of Fiscal 2026. Key coal-producing states (including Odisha, Jharkhand, and Chhattisgarh) experienced prolonged and unseasonal monsoons, which temporarily hampered open-cast mining operations, pit head evacuation, and logistics.
- Sustained Baseload Capacity: Despite these transient weather disruptions, the absolute volume of coal produced remains highly elevated. The sector's ability to quickly recover and stabilize output in the latter half of the fiscal year underscores its robust capacity to meet the critical baseload fuel requirements of India's thermal power plants and heavy manufacturing industries (such as steel and cement), and its critical role in India's energy security.

1.5.4 Mining and quarrying industry's contribution to GVA

The mining and quarrying sector is a critical component of India's industrial architecture, providing the essential raw materials and energy inputs that fuel the manufacturing, construction, and power sectors. At constant (2011-12) prices, the mining and quarrying sector's Gross Value Added (GVA) is estimated to reach ₹3.37 trillion in Fiscal 2026 (Advance Estimates), accounting for ~2.0% of India's total GVA. This represents a steady expansion from ₹3.17 trillion in Fiscal 2020. For Fiscal 2026 (First Advance Estimates), the sector's GVA is estimated at ₹3.37 trillion, reflecting a marginal consolidation of -0.7%.[20] This temporary moderation was primarily driven by prolonged and unseasonal monsoon disruptions in the first half of the fiscal year, which temporarily impacted open-cast mining operations across major mineral belts.

Figure 1.6 Share of mining and quarrying in India's GVA and YoY growth



Source: CRISIL Intelligence, RBI and NSO, Handbook of Statistics on Indian Economy- 2025, All years are fiscal years

Note: The fiscal 2026 numbers are taken from the press note on provisional estimates of Indian GDP by Ministry of Statistics and Programme Implementation dated June 05, 2026.

1.5. Performance of key macroeconomic indicators

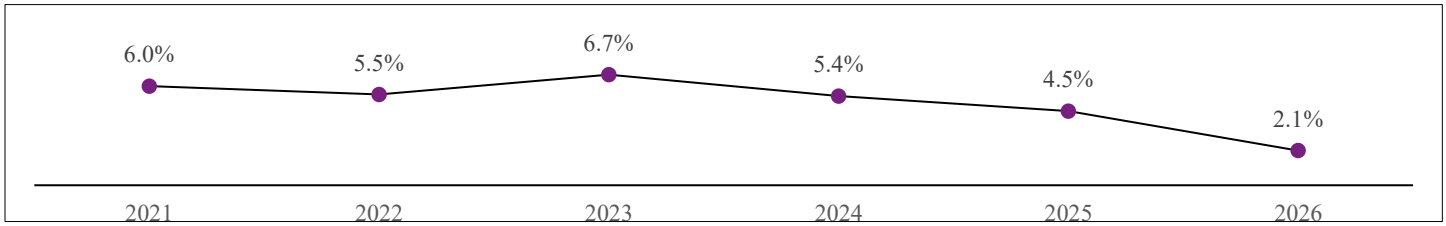
1.6.1 Consumer price index

India's retail inflation has moderated significantly from a peak of 6.7% in Fiscal 2023 to 2.1% in Fiscal 2026, reflecting easing price pressures and a stable macroeconomic environment. This decline has been supported by government supply-side measures, softer global

[20] *MoSPI- First Advance Estimates of Gross Domestic Product, 2025-26; Jan 07, 2026*

commodity prices, and prudent monetary policy by the RBI. Lower inflation has enabled policy rate cuts, boosted consumption, reduced borrowing costs, and strengthened the investment climate for long-term capital expenditure.

Figure 1.7 CPI inflation trend

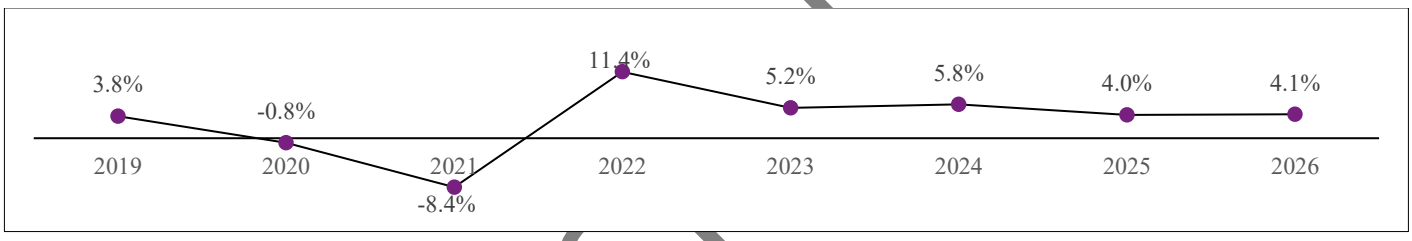


Source: NSO, Ministry of Industry and Commerce, CRISIL Intelligence; All years are fiscal years

1.6.2 Index of Industrial Production

The Index of Industrial Production (IIP) averaged a modest 2.2% growth between Fiscals 2019 and 2023, before surging to 5.8% in Fiscal 2024 and stabilizing at 4.0% in Fiscal 2025 and 4.1% in Fiscal 2026. This sustained industrial momentum has been primarily anchored by strong expansions in basic metals, capital goods, and electrical equipment manufacturing, reflecting a robust domestic capex cycle. For energy-intensive industries and power utilities, this steady industrial output translates directly into elevated electricity demand and baseload power requirements.

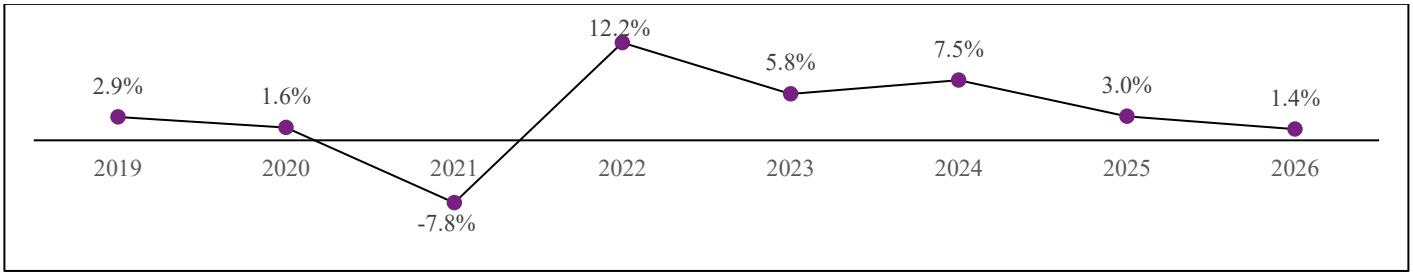
Figure 1.8 IIP growth trend



Source: NSO, Ministry of Industry and Commerce, CRISIL Intelligence; All years are fiscal years

The mining sector has demonstrated a strong post-pandemic recovery, rebounding from a 7.8% contraction in Fiscal 2021 to robust growth of 12.2% in Fiscal 2022, followed by sustained expansion through Fiscal 2024. Growth moderated to 3.0% in Fiscal 2025 and 1.4% in Fiscal 2026, largely due to a high base effect and monsoon-related disruptions in key mining regions. Despite the slowdown, production levels remain elevated, supported by strong demand for coal, iron ore, and limestone from the power, steel, cement, and manufacturing sectors.

Figure 1.9 IIP growth trend for mining sector

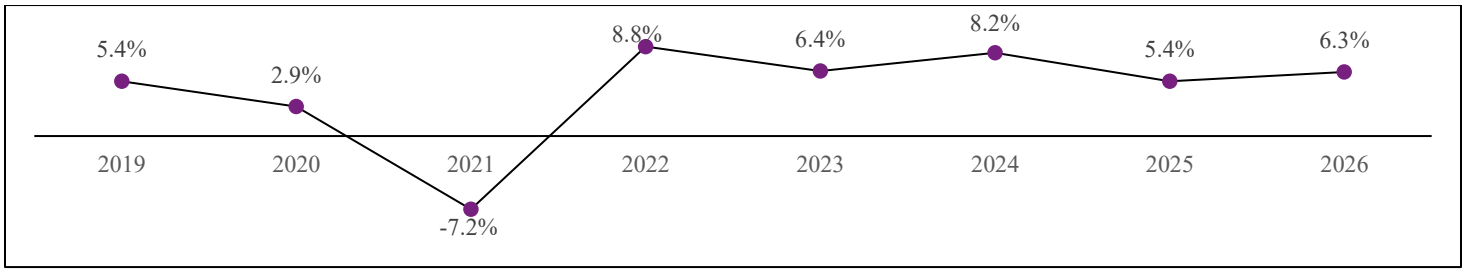


Source: NSO, Ministry of Industry and Commerce, CRISIL Intelligence; All years are fiscal years

1.6.3 Gross national income

The growth rate in the per capita gross national income (GNI) recorded a significant fall in Fiscal 2021. However, after the pandemic era, per capita GNI has rebounded and thereafter moderated to 5.4% in Fiscal 2025 and is expected to grow by 6.3% in Fiscal 2026.

Figure 1.10 Per capita GNI growth trend (%)

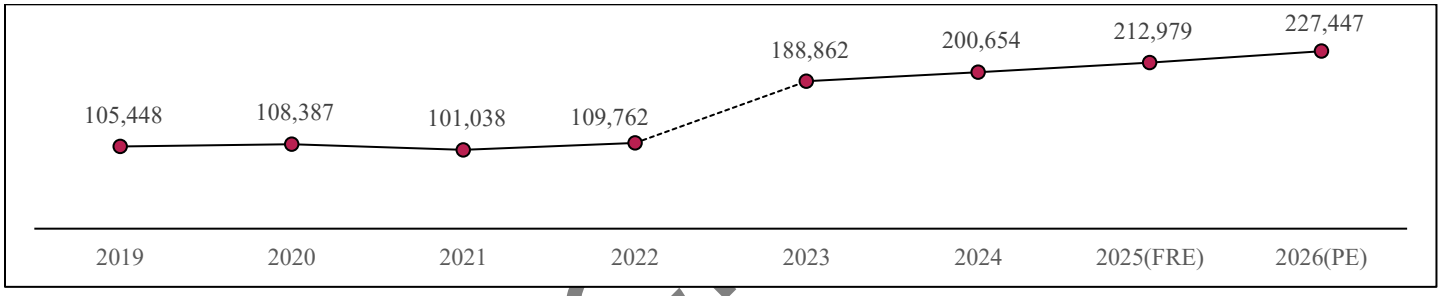


Source: NSO, Ministry of Industry and Commerce, CRISIL Intelligence; All years are fiscal years

1.6.4 Nominal GDP per capita

India's GDP per capita has followed a steady upward trajectory, reflecting the country's robust economic expansion and structural development over the past decade and a half. According to the RBI statistics report (2025-26), India's GDP per capita (At constant price) stood at approximately ₹2,00,654 in Fiscal 2024, grew to ₹2,12,979 (estimated) in Fiscal 2025, and is projected to reach ₹2,27,447 in Fiscal 2026, a growth of 13.4% in last two years. This expansion has been propelled by an expanding young workforce, aggressive public infrastructure investments, a thriving services export engine, and rapid digital transformation.

Figure 1.11 GDP per capita at constant price of India (₹)

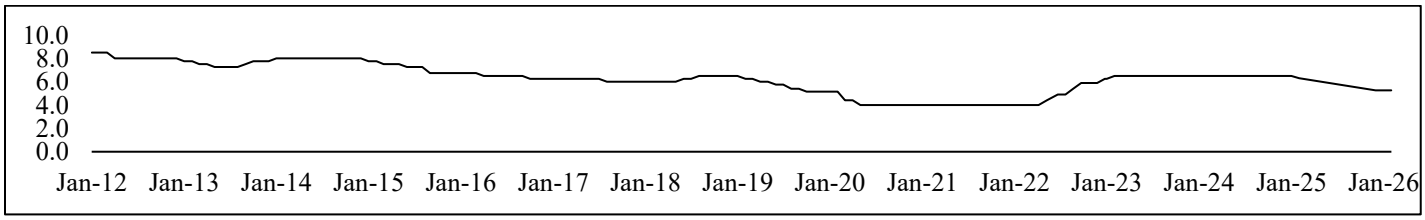


Source: RBI- Handbook of Statistics on the Indian Economy, 2024-25 & 2025-26; GDP per capita, constant price; years- Fiscal years.
Note: Post Fiscal 2023, RBI adopted 2022-23 as base year, hence the shift in the absolute value, Values before Fiscal 2023 are based on 2011-12 series; FRE- First Revised Estimates, PE- Provisional Estimates.

1.6.5 Interest Rates

Following a pandemic-era low of 4.00% (2020–2021), the RBI aggressively raised the policy repo rate to 6.50% by February 2023 to curb inflationary pressures, maintaining a pause at this level throughout 2024. As the headline inflation moderated, the RBI initiated an easing cycle in February 2025, cutting the repo rate by 25 basis points (bps) to 6.25%. A cumulative reduction of 125 bps over the course of 2025 brought the benchmark rate down to 5.25% by December 2025, which has been maintained through mid-2026 under a neutral policy stance.[21]

Figure 1.12 Trend of change in repo rate of India



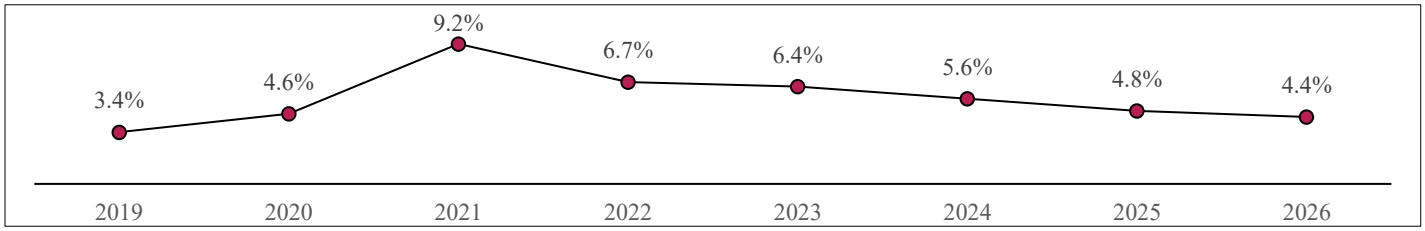
Source: Reserve Bank of India

[21] *RBI: Monetary Policy Statement, 2025-26 Resolution of the Monetary Policy Committee February 4 to 6, 2026.*

1.6.6 Fiscal Deficit

Over the past few years, India's fiscal deficit as a percentage of GDP has exhibited significant fluctuations, with a pre-pandemic level of 3.4% in Fiscal 2019, increasing to 4.6% in fiscal 2020 and peaking at 9.2% in Fiscal 2021 due to the COVID-19 pandemic. However, the government has since initiated fiscal consolidation efforts, with the deficit narrowing to 6.7% in Fiscal 2022, further reducing to 4.8% in Fiscal 2025 and projected to be at 4.4% in Fiscal 2026.

Figure 1.13 Fiscal deficit of India as a % of GDP



Source: Indian Budget documents, Economic survey, all years are fiscal

1.6.7 Overview of other demographic factors in India

1.6.7.1 Per capita Electricity Consumption

The world's electricity consumption has followed a steady upward trajectory, driven by population growth, rapid urbanization, industrialization, electrification of transport and rapid expansion of digital infrastructure (including AI data centers). According to Ember's Yearly Electricity Data (2026), global electricity demand reached a historic high of 30,856 Terawatt-hours (TWh) in 2024[22], up from 29,471 TWh in 2023.[23]

India being one of the world's most populous nation, is a primary driver of this global demand expansion. Driven by a robustly growing economy, expanding industrial manufacturing, and rising household incomes, India's total electricity demand reached 2,054 TWh in 2024 (accounting for ~6.7% of the global share)[22], solidifying its position as the third-largest electricity consumer globally, trailing only China (10,066 TWh; ~32.6% share) and the United States (4,401 TWh; ~14.3% share)[22] Despite this massive aggregate demand, India's per capita electricity consumption remains significantly lower than that of developed and major emerging economies, representing a massive headroom for future growth. According to the Central Electricity Authority (CEA), India's annual per capita electricity consumption stood at 1,395 kWh in Fiscal 2024 (up from 1,331 kWh in Fiscal 2023)[24], which is only ~36.7% (nearly one-third) of the global average of 3,800 kWh.[36]

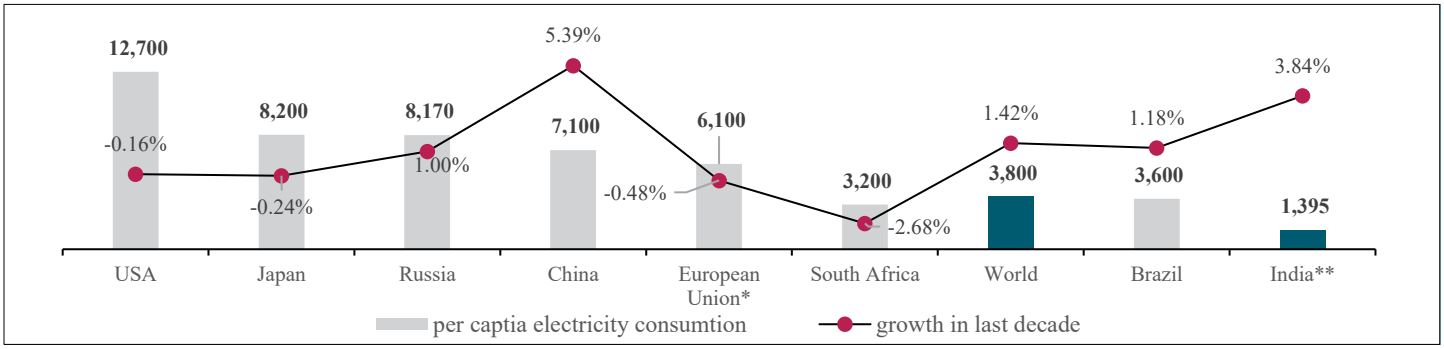
Comparison with global consumption trends and Insights-

- Massive Growth Headroom: A comparison with peer nations reveals the scale of India's expansion potential. The United States' per capita consumption (12,700 kWh) is nearly nine times that of India, while China's per capita consumption (7,100 kWh) is five times larger. As India's urban migration accelerates and industrial capacity expands, its per capita consumption is structurally bound to converge toward the global average.[25]
- Divergent Global Growth Dynamics: Over the last decade, mature economies like the US (-0.16% CAGR), the EU (-0.48% CAGR), and Japan (-0.24% CAGR) have experienced a structural decline or stagnation in per capita consumption due to aggressive energy-efficiency gains and a shift toward service-dominated economies. Conversely, developing Asian giants- led by China (5.39% CAGR) and India (3.84% CAGR)- continue to drive global power demand growth.[26]
- Universal Electrification and Grid Reliability: India's per capita electricity rise is heavily supported by the government's successful universal household electrification programs (such as Saubhagya) and a dramatic reduction in national power shortages to a mere 0.1% in Fiscal 2025 (down from 4.2% in Fiscal 2014).[27]

[22] *EMBER: Global electricity review 2025*
[23] *EMEBER: Global electricity review 2024*
[24] *ICED & CEA: India Energy overview, 2025*
[25] *Ember Yearly Electricity Data (2026); Energy Institute Statistical Review of World Energy (2025)*
[26] *Ember Global electricity review 2025*
[27] *Ministry of Power, Year-end review 2025*

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Figure 1.14 Per capita electricity consumption in CY2024 in kWh/ person and CAGR (10 year) 2014 - 2024



Source: Ember Yearly Electricity Data (2026); Energy Institute Statistical Review of World Energy (2025); Central Electricity Authority (CEA), Government of India, Crisil Intelligence, All India Electricity Statistics (General Review) by Central Electricity Authority

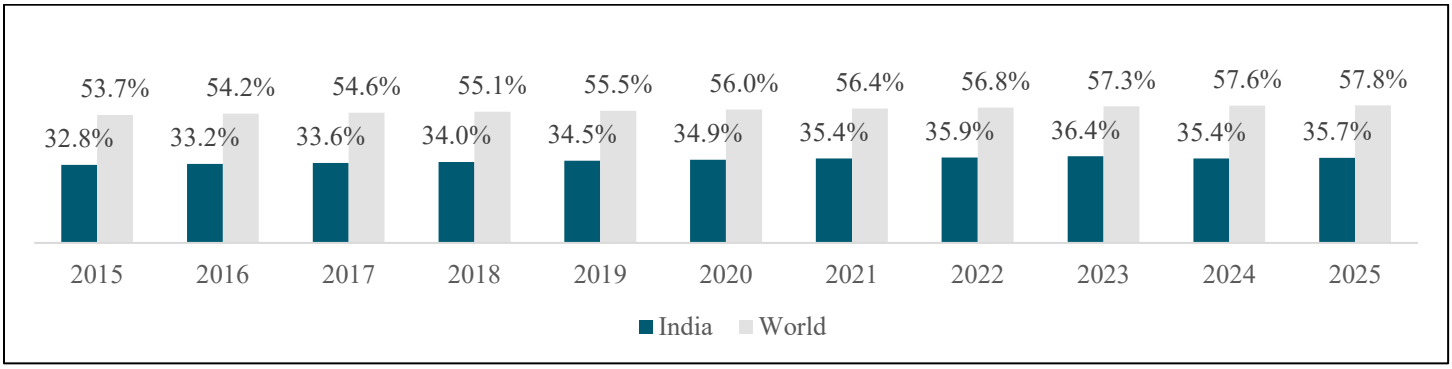
Note: India's figures are aligned with the Indian Fiscal Year (FY14 and FY24) as per CEA guidelines, while global figures are on a Calendar Year (CY) basis for international comparability.

India's electricity demand has grown at an average annual rate of over 6% between 2023 and 2026[28], making it the fastest growing among major global economies. Long-term demand is expected to remain strong, supported by rising incomes, improving grid reliability, increasing EV adoption, and railway electrification. Rural electrification and growing penetration of energy-intensive appliances, particularly air conditioners, are further driving per capita electricity consumption across the country. While certain counter-balancing factors such as enhanced energy-efficiency standards, targeted transmission and distribution (T&D) loss reductions, national sustainability targets, and the growing share of the services sector in GDP- may moderate the pace of growth, the overarching demand trajectory remains highly robust. Reflecting these dynamics, the Central Electricity Authority (CEA), in its National Electricity Plan (NEP), projects India's per capita electricity consumption to reach 1,700 to 1,800 kWh by Fiscal 2032.[29]

1.6.7.1 Urbanization

India is undergoing one of the world's largest urban transformations, with the urban population projected to reach approximately 600 million by 2036, accounting for 40% of the total population and contributing nearly 70% of GDP[30]. As urban residents increased from 420 million in 2014 to about 513 million in 2024, India has emerged as the world's second-largest urban population after China. Supporting this rapid urbanization will require investments of around US$ 840 billion over the next decade to develop livable, resilient, and inclusive cities[31]. Furthermore, India is expected to lead global urban population growth through 2050, making sustainable urban development a critical pillar of the Viksit Bharat 2047 vision.[32]

Figure 1.15 Share of urban population of India and the World from 2015 to 2025



Source: World Bank Group

[28] *IEA, Electricity 2026, Executive summary*
[29] *CEA National electricity plan, 2022*
[30] *World Bank group: Gearing up for India's Rapid Urban Transformation, May 30,2024*
[31] *IBEF Power Industry Report, Update: June 2026*
[32] *UN: Revision of World Urbanization Prospects*

by S&P Global

1.6.8 Outlook on Global GDP

The global economy experienced moderate and uneven growth between 2024 and 2026, with GDP growth remaining stable at 3.2% in 2024 and 2025 and projected to ease slightly to 3.1% in 2026. While strong U.S. consumption and fiscal support in China supported global activity, trade fragmentation, tariffs, and tight monetary policies constrained broader expansion. Growth continued to diverge across regions, with emerging economies projected to grow at 4.0% in 2026 versus 1.5% for advanced economies, amid ongoing geopolitical and financial market disruptions.

Table 1.4 Major Macroeconomic Events Shaping the Global and Indian Economies

Key events	Impact
Escalation of the US-China Trade War (2025-2026)	The trade dispute between the world's two largest economies escalated dramatically in early 2025, introducing severe headwinds to global supply chains: • **Tariff Spiral:** In April 2025, the United States aggressively hiked import duties on Chinese goods under its reciprocal tariff policies, culminating in an effective tariff rate of **145%** (which included a 125% reciprocal levy stacked on top of a pre-existing 20% tariff).[33] • **Retaliation and Countermeasures:** China responded in kind, raising its retaliatory tariffs on US imports (including critical agricultural products, aerospace components, and pharmaceuticals) to **125%**. Furthermore, Beijing suspended various agricultural imports and tightened export controls on heavy rare-earth elements and permanent magnets materials critical to the global automotive, defense, and semiconductor industries.33 • **Market Impact and Truce:** This tariff spiral triggered immediate global market anxiety, causing sharp corrections in US equity indices (with the S&P 500 and Dow Jones dropping over 4% in single sessions) and disrupting multinational supply chains. Although a temporary bilateral truce in May 2025 lowered active tariff rates, and a US Supreme Court ruling in February 2026 struck down certain emergency tariff implementations, the episode structurally accelerated the global shift toward supply-chain near-shoring and "friend-shoring".
US Fiscal Policy, Treasury Yields, and Monetary Divergence	The combination of expansive US fiscal deficits and a resilient domestic labour market created persistent inflationary undercurrents, directly impacting global capital markets: • **Elevated Yields:** Continued high government spending in the US, paired with expectations of a slower and more cautious rate-cut cycle by the Federal Reserve, pushed 10-year US Treasury yields to elevated levels. • **Capital Realignment:** The resulting wide interest-rate and yield differentials between the US and emerging markets triggered capital outflows from developing economies, exerting downward pressure on emerging-market currencies and forcing central banks worldwide to maintain higher-for-longer domestic policy rates to defend their currencies.
Geopolitical Conflicts and Trade Route Vulnerabilities	Ongoing conflicts in Eastern Europe and the Middle East, alongside persistent security threats in key maritime corridors like the Red Sea, continued to impose a "geopolitical premium" on global trade. These disruptions increased shipping transit times, inflated maritime insurance premiums, and introduced periodic volatility into global energy and commodity markets.

Source: Crisil Intelligence

Crisil

1.6. Mining (including Coal) Industry Contribution to India's GDP/GVA

The mining and quarrying sector is a vital primary industry that serves as the bedrock of India's industrial value chain. It supplies critical raw materials to core sectors such as power, steel, cement, and aluminium. Within this sector, coal mining is the dominant contributor, accounting for the largest share of the sector's total value and volume of mineral production.

Over the past decade (Fiscal 2016 to Fiscal 2026), the contribution of the mining and quarrying sector to India's total Gross Value Added (GVA) at constant prices has stabilized at around 1.8%. While the absolute GVA of the mining sector has expanded from ₹2.94 trillion in Fiscal 2016 to ₹3.37 trillion in Fiscal 2026 (First Advance Estimates), its percentage share in total GVA has moderated slightly. This moderation is a natural structural feature of a rapidly developing economy, where the secondary (manufacturing) and tertiary (services) sectors expand at a faster relative pace.

However, the strategic importance of the mining sector far exceeds its direct GVA contribution due to its high economic multiplier effect:

- Energy Security Anchor: In Fiscal 2026, thermal power accounted for approximately 70% of India's electricity generation

[33] *https://www.china-briefing.com/news/us-china-tariff-rates-2025/*

- ~43% of the domestic electricity generation capacity. The domestic mining sector, spearheaded by coal, is the primary guarantor of national energy security.
- Import Substitution: The Government of India has placed a high priority on reducing reliance on imported non-coking coal. Expanding domestic mining capacity directly conserves foreign exchange reserves and shields the domestic economy from global commodity price shocks.
- Industrial Catalyst: Steady domestic production of iron ore, limestone, and bauxite supports the GVA growth of the manufacturing and construction sectors, which are expanding rapidly under the government's capex push.

1.7. Power Industry Contribution to India's GDP/GVA

The power industry along with gas, water supply & other utility service in India's national accounts, is a core secondary sector that acts as a primary barometer of industrial activity and living standards.

Over the last decade, the power and utility sector has been one of the most consistent performers in the Indian economy, expanding at a 10-year CAGR of 6.32% (Fiscal 2016 to Fiscal 2026). This rapid growth has been propelled through Government programs like Saubhagya and Deen Dayal Upadhyaya Gram Jyoti Yojana along with rapid urban migration, expansion of heavy manufacturing, accelerating adoption of EV followed by deployment of EV charging network and establishment of high-capacity data centers.

Power sector GVA forecast

To support India's target of becoming a developed nation by 2047, the power sector is projected to undergo a massive expansion over the next decade. According to the Central Electricity Authority (CEA) and the International Energy Agency (IEA), India's power demand is expected to grow at a CAGR of ~6.0% to 6.5% through Fiscal 2031.

Table 1.5 Projected Power & Utility Sector GVA and Share (Fiscal 2027 to Fiscal 2031)

Fiscal Year	Projected Power Sector GVA (₹ trillion)	Projected YoY Growth (%)	Projected Total India GVA (₹ Trillion)	%Share in Total GVA (Projected)
2027P	4.41	6.50%	197.42	2.23%
2028P	4.70	6.50%	211.23	2.23%
2029P	5.00	6.50%	226.02	2.21%
2030P	5.33	6.50%	241.84	2.20%
2031P	**5.67**	**6.50%**	**258.77**	**2.19%**

Source: CRISIL MI&A / Intelligence Estimates; CEA National Electricity Plan (NEP) Projections
Note: Projections are calculated at constant (2011–12) prices using a 6.5% CAGR for power GVA and 7.0% CAGR for total GVA from the Fiscal 2026 FAE baseline.

Key Drivers of the Fiscal 2027–2031 Forecast:

- Massive Capital Expenditure: India's power sector is expected to attract over ₹17 trillion (US$205 billion) in investments over the next 5 to 7 years, focusing on generation, transmission, and grid modernization.[34]
- Thermal Baseload Capacity Expansion: To ensure grid stability alongside rapid renewable energy additions, India plans to add 80 GW of new thermal power capacity by Fiscal 2032, attracting ₹2.3 trillion in investments.[34]
- EV and Charging Infrastructure Boom: The domestic EV charging station market, valued at US$129 million in 2026 and projected to reach US$824 Million by 2031, projected expansion at ~45% CAGR between 2026 and 2031.[35]

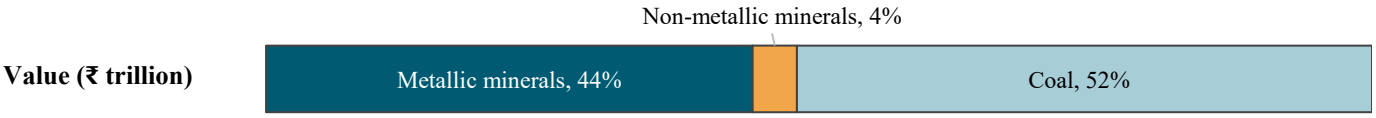
[34] *IBEF Power Industry Report, Update: June 2026*
[35] *MARKETSANDMARKETS: India EV Charging Station Market (2026-2031)*

2. Indian Coal Mining Industry Overview

2.1 Minerals at the core

The key minerals mined in India are coal, iron ore, and limestone, which are intricately linked to the country's power, steel, and cement industries. Coal, the primary source of fuel for India's thermal power plants, accounts for over ~70% of the country's electricity generation mix (Fiscal 2026).[36] The power sector, which is heavily reliant on coal, is also closely tied to the steel and cement industries, as electricity is a critical input for the production of steel and cement.

Figure 2.1 Value of minerals produced in India in Fiscal 2025

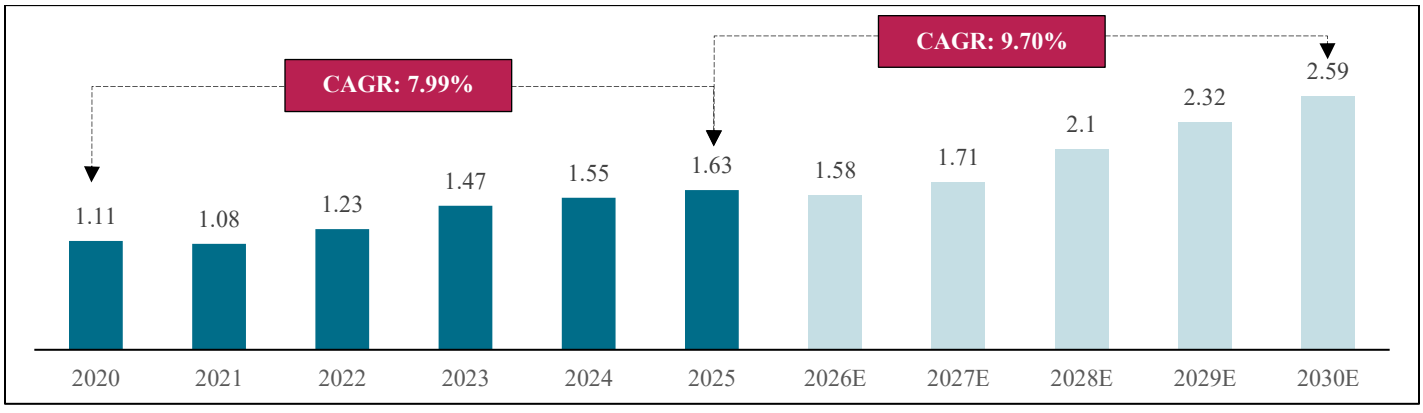


Source: IBM Monthly Statistics (Mar-25), Coal Directory (2024-25), total value of mineral production is ₹3.11 trillion for fiscal 2025

The value of minerals mined in India is estimated to be ~₹3.11 trillion in Fiscal 2025 contributed by coal and non-coal minerals. Coal is undeniably the most crucial mineral for India, accounting for ~52% (₹ 1.63 trillion).[37] of the total value of minerals mined in the country in Fiscal 2025. Given India's rapidly growing economy (6.5% real GDP growth rate expected from CY2027 to CY2031, according to the IMF estimate[38]), the demand for energy is ever-increasing, making non-coking coal indispensable for ensuring energy security. The importance of coal is further underscored by its widespread use in various industries[39], from cement to chemicals, contributing significantly to India's industrial output.

Besides coal, metallic minerals contribute to the country's mineral wealth significantly, at ~44% (₹1.38 trillion) of the value of minerals mined in Fiscal 2025. Iron ore, contributing ~33% to the total value of minerals mined in India, is another essential mineral that underpins India's economic framework. Given that the mining industry contributes ~2.0% to India's GVA, coal and iron ore contribute about 85% of this number. Coal, with its 52% share in the value of minerals mined, accounts for a significant portion of this GVA contribution, primarily through its role in power generation (~72% of coal demand is from the power sector, including captive power plants[40]).

Figure 2.2 Value of coal produced in India and expected future value (Rs trillion)



Source: IBM Statistics, Coal Directory, CRISIL Intelligence analysis; All years are fiscal years; E-Estimated

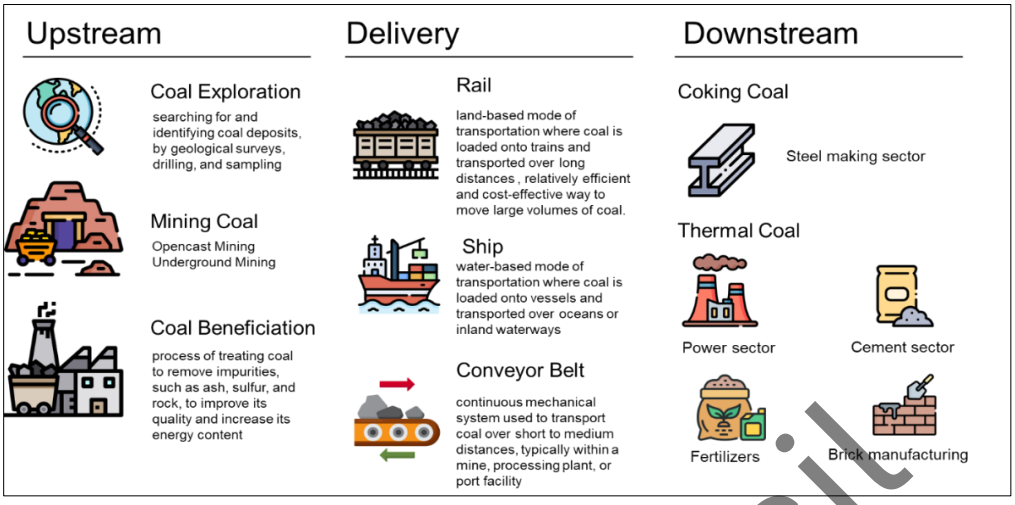
[36] *Central Electricity Authority (General Review)*
[37] *Ministry of Mines, Government of India, total Value of Mineral production, Coal Statistics (2024-25), Pit head value of coal*
[38] *As per International Monetary Fund (IMF)- World Economic Outlook (April 2026)*
[39] *Mentioned the share of coal demand in various sectors in detail in the coal demand & supply dynamics chapter*
[40] *CRISIL Intelligence analysis*

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2.2 Overview of the structure of the Indian coal industry and major business drivers of the coal (with specific focus on non-coking coal)

Coal remains the backbone of India's energy sector and continues to play a critical role in supporting the country's economic growth, industrial development and energy security. India is the world's second-largest producer and consumer of coal and possesses one of the largest coal resource bases globally. The country's growing electricity demand, rapid urbanisation, industrial expansion and infrastructure development continue to drive demand for coal, particularly non-coking coal used for thermal power generation.

Figure 2.3 Coal's Value chain

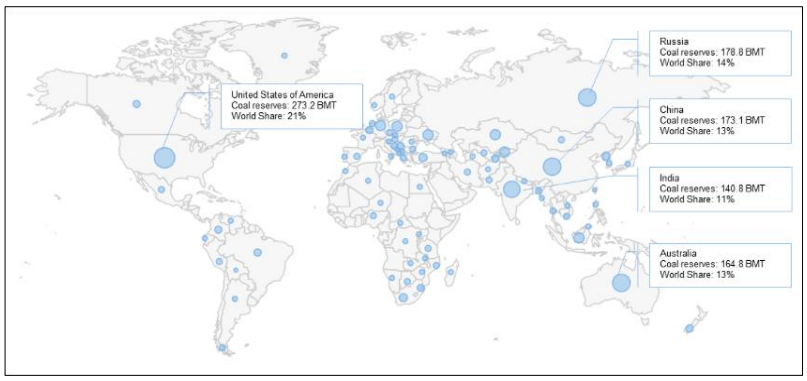


Source: Crisil Intelligence

2.2.1 Coal reserves and resources

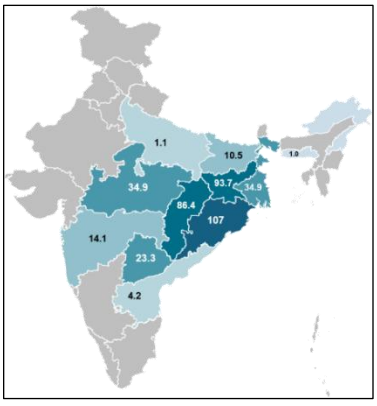
As of 2023, global coal reserves were estimated at approximately 1,165.9 billion metric tonnes (BMT)[41], with a significant concentration in the Asia-Pacific region. The United States, Russia, China, Australia, and India collectively accounted for nearly 72% of the world's total coal reserves, highlighting their strategic importance in the global coal industry.

Figure 2.4 Total coal reserves across the world in Billion Metric Tonnes in 2023



Source: U.S. Energy Information Administration (EIA)
Note: Coal reserve quoted here are under stricter international standard (US EIA Methodology), which differs from the methodology used by GOI. As per MoC data Indian Coal resources as at 01.04.2026 are ~411.5 billion metric tonnes.

Figure 2.5 Total coal resource across India in Billion Metric Tonnes as at 01.04.2026



Source: GSI, Indian Coal and Lignite Resources - 2026

[41] *U.S. Energy Information Administration (EIA)*

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As at 01.04.2026, India's total coal resource base is estimated at ~411.53 billion tonnes (Bt), reflecting the country's significant position among the world's leading coal-rich nations. Coal resources are heavily concentrated in the eastern and central parts of the country, with Odisha (106.76 Bt), Jharkhand (93.66 Bt), and Chhattisgarh (86.41 Bt) emerging as the three largest coal resource-bearing states. Together, these states account for nearly 70% of India's total coal resources, underscoring their strategic importance to the country's coal industry.

The eastern coal belt, comprising Odisha, Jharkhand, and West Bengal, continues to serve as the backbone of India's coal sector, collectively hosting approximately 235.35 BT of coal resources, or about 57% of the national coal resource base. Odisha alone accounts for more than one-fourth of the country's total coal resources, driven primarily by the resource-rich Talcher and Ib River Coalfield (also known as Ib Valley coalfield). The concentration of substantial coal reserves in these states has facilitated the development of several large-scale mining operations and continues to support domestic coal production, power generation, and industrial growth across the country.[42]

2.2.2 Types of Coal

Coal has been one of the most important sources of energy for human civilization and continues to play a crucial role in supporting economic growth, industrialization and electricity generation across the world. Coal is a combustible sedimentary rock composed primarily of carbon, hydrogen, oxygen and varying amounts of sulfur, nitrogen and moisture. Owing to its energy-rich composition and widespread availability, coal remains among the most widely used fossil fuels globally. Overall coal can also be classified into tow types- coking coal and non-coking coal based on its physico- chemical properties.

2.2.2.1 Coking Coal

Coking coal, also known as metallurgical coal, occupies a strategic position in the steel manufacturing value chain due to its unique ability to produce coke upon carbonization. The use of coking coal gained prominence during the Industrial Revolution when coke emerged as a more efficient alternative to charcoal in blast furnace operations, enabling large-scale iron and steel production. The suitability of coal for metallurgical applications depends on several parameters including ash content, moisture content, caking properties, Free Swelling Index (FSI) and Coke Strength afte Reaction (CSR). In India coking coal is classified into different grades based on ash and moisture content.

In India, economically extractable coking coal reserves are relatively limited and are concentrated primarily in the Jharia, Bokaro and Raniganj coalfields and of inferior quality. As a result, domestic steel producers relies on imported coking coal to supplement domestic supplies and meet quality requirements.

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2.2.2.2 Non-Coking Coal

Non-coking coal is most widely consumed category of coal in India and constitutes the dominant share of the country's coal reserves and production. Unlike coking coal, non-coking coal does not possess the ability to form coke upon heating in the absence of air and is therefore unsuitable for blast furnace-based steelmaking. Instead, it is primarily utilized as a source of heat and energy across various sectors of the economy. The growing importance of non-coking coal is closely linked to the expansion of electricity generation, industrial activity, urbanization and infrastructure development. India continues to rely significantly on coal-based thermal power generation to meet its rapidly growing energy requirements, making non-coking coal a critical component of the country's energy mix and energy security framework.

The quality and commercial value of non-coking coal are primarily determined by its Gross Calorific Value (GCV), which measures the amount of heat energy released during combustion. In addition to calorific value, parameters such as ash content, moisture content, sulfur content and volatile matter influence the suitability of non-coking coal for power generation and industrial applications. Non-coking coal is extensively consumed by thermal power plants, captive power producers, cement manufacturers, sponge iron units, brick kilns and various industrial boilers. Given its widespread use and abundant domestic availability, non-coking coal is expected to remain one of India's most important sources of primary energy over the medium term.

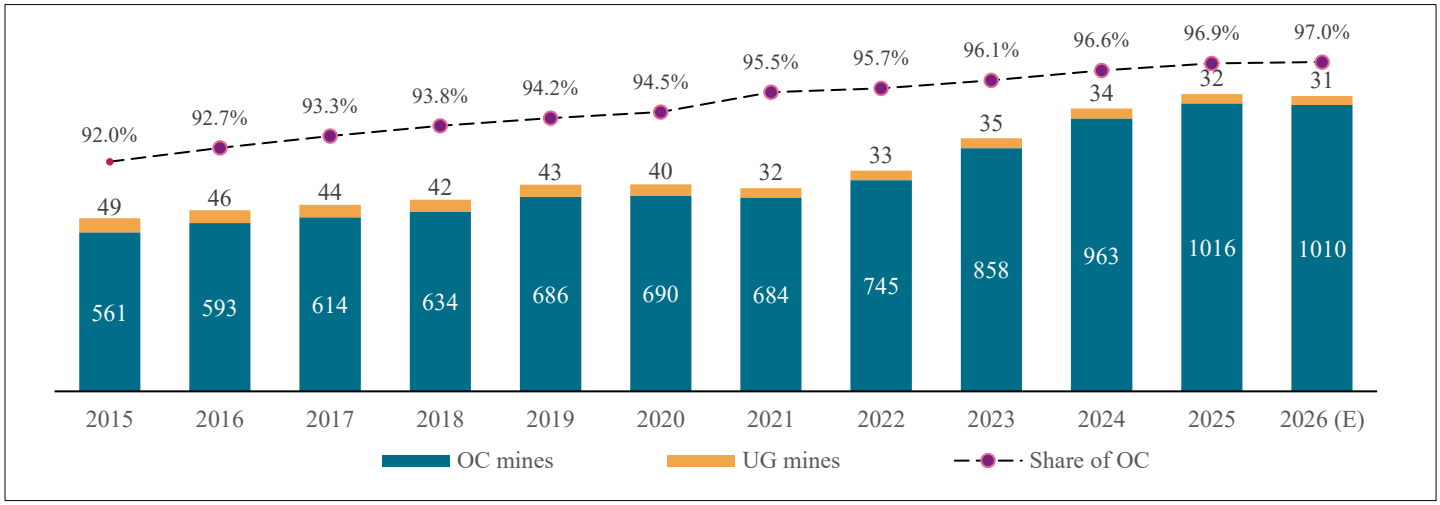
[42] *Geological Survey of India's Inventory of Coal and Lignite Resources as on 01.04.2026)*

As the largest producers of non-coking coal in India, MCL plays a pivotal role in supplying non-coking coal to power generation companies and industrial consumers across the country. The Company's operations in the Talcher and Ib Valley coalfields contribute significantly to meeting India's growing coal demand and strengthening national energy security. The GCV-based grading system provides a standardized mechanism for assessing coal quality and facilitates transparent pricing and allocation. Higher-grade non-coking coal typically offers greater thermal efficiency and lower coal consumption per unit of energy generated, making it particularly attractive for power producers and industrial consumers.

2.2.4 Coal Mining

Coal extraction is primarily undertaken through two mining methods: Opencast (OC) Mining and Underground (UG) Mining. The selection of a mining method depends on factors such as the depth and thickness of coal seams, geological conditions, stripping ratio, production requirements, safety considerations, and economic viability. While both the methods continue to be employed in India, coal production is overwhelmingly dominated by opencast operations owing to their higher productivity, greater mechanization, lower unit production costs, and superior resource recovery rates.

Figure 2.6 Share of coal production in OC and UG mines in India in MT



Source: Coal Directory fiscal 2024-25; Crisil analysis; all years are fiscal years; E-estimated

The contribution of opencast mining to India's coal production has steadily increased over the past decade. Improvements in mining technology, expansion of large-scale surface mines, and favorable production economics have led to a growing reliance on opencast operations. In Fiscal 2025, opencast mines produced approximately 1,016 million tonnes (MT) of coal, accounting for 96.9% of the country's total coal production, while underground mines contributed around 32 MT. Total coal production during the year stood at approximately 1,048 MT.[43]

The long-term trend highlights a gradual shift towards surface mining. While overall coal production has increased significantly over the years, output from underground mines has remained relatively stagnant and, in some cases, declined due to challenging geological conditions, higher capital and operating costs, lower productivity, and complex mine ventilation and safety requirements. Consequently, opencast mining is expected to remain the principal mode of coal extraction in India over the medium term.

2.2.4.1 Opencast Coal Mining

Opencast mining is the dominant method of coal extraction in India, contributing nearly 97% of total coal production due to its highly mechanized operations, scalability, and lower production costs. It offers several advantages, including higher resource recovery, operational flexibility, faster project development, and improved safety compared to underground mining. Modern opencast mines

[43] *Coal Directory 2024-25, Ministry of coal annual report 2025*

employ advanced equipment such as draglines, excavators, rope shovels, dump trucks, drills, and surface miners for efficient coal extraction. Major coal-producing states including Odisha, Chhattisgarh, Jharkhand, Madhya Pradesh, and Maharashtra are largely dependent on opencast mining.

2.2.4.2 Underground Coal Mining

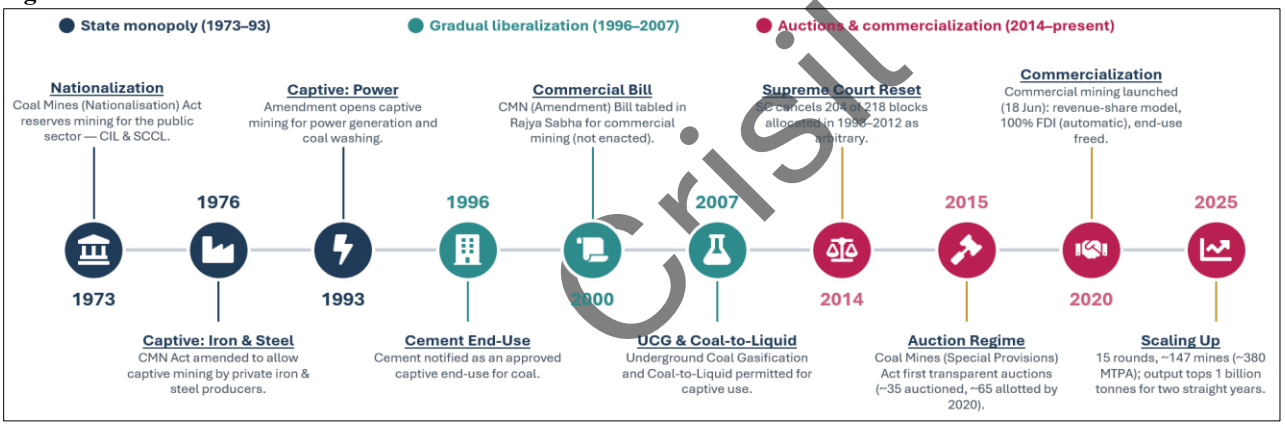
Underground coal mining is employed to extract coal reserves located at significant depths where opencast mining is not economically feasible. Although it contributes a smaller share of India's total coal production due to higher costs, geological complexities, and lower productivity, it remains vital for accessing deep-seated reserves in states such as Jharkhand, West Bengal, Chhattisgarh, and Madhya Pradesh. This method supports the long-term utilization of the country's coal resources by enabling extraction from deposits inaccessible through surface mining.

Further, in both the cases, spontaneous combustion is an inherent property of coal that causes stockpile deterioration by burning combustible matter, reducing calorific value, and altering chemical properties.

2.3 Analysis of the regulatory framework and policies governing coal sector

Coal is a Union subject regulated primarily by the Ministry of Coal (MoC). Over the review period the sector has moved from a state-run, nomination-based regime to a transparent, auction-led market open to commercial and foreign participation, while remaining anchored by administered supply to the power sector.

Figure 2.7 Coal sector: From nationalization to commercialization



Source: Crisil Intelligence

Coal, the primary source of fuel for India's thermal power plants, accounts for over 75% of the country's electricity. The Government of India initiated a major reform in June 2020 by permitting commercial coal mining with the objective of enhancing domestic coal production and reducing import dependence. The reform opened coal block auctions to a wider range of participants, including domestic and international companies, allowing them to mine and market coal without any end-use restrictions. Additionally, captive mine operators were permitted to sell up to 50% of their annual coal production in the open market after meeting their captive consumption requirements.

Since the introduction of commercial coal mining, the Ministry of Coal has undertaken multiple rounds of commercial coal block auctions, significantly increasing private sector participation in the sector. As of August 2026, 147 coal blocks have been successfully auctioned, with an aggregate production capacity of ~378 MTPA[44]. The reforms have attracted participation from mining, infrastructure, metals, power and energy companies, thereby broadening the industry's competitive landscape and facilitating the development of additional domestic coal production capacity. Coal production in India is undertaken by both public sector enterprises, including Coal India Limited (CIL), Singareni Collieries Company Limited (SCCL), NLC India Limited, Gujarat Mineral Development Corporation

[44] https://www.pib.gov.in/PressReleasePage.aspx?PRID=2294522&reg=1&lang=1; https://www.coal.nic.in/nominated-authority/auction-allotment

(GMDC), Andhra Pradesh Mineral Development Corporation (APMDC) and NTPC Limited (NTPC Mining Limited), as well as private sector players operating captive and commercial coal mines.

2.3.1 Central Laws and Policies Governing the Coal Sector

Policy decisions have a substantial impact on the energy sector, with recent government actions targeting reduced coal imports and greater sustainability.

2.3.1.1 Mines and Minerals (Development and Regulation) Act, 1957 (MMDR Act)

The parent law for all minerals, including coal. Its landmark 2015 amendment made auction the default mode of allocation and created the District Mineral Foundation (DMF) and National Mineral Exploration Trust (NMET). The 2021 amendment removed the captive/merchant distinction and now lets captive coal mines sell up to 50% of output in the open market (on an additional charge), with no end-use restriction on future auctions; the 2023 and 2025 amendments deepened exploration and critical-mineral provisions. Coal royalty remains 14% ad valorem (last revised 2012).

The MMDR Amendment Act, 2026 establishes a uniform and predictable national fiscal framework by prohibiting State Governments from imposing new taxes, cess, or levies on mineral rights and mineral-bearing lands unless permitted by the Central Government. It expands Union control to cover mineral-bearing lands and invalidates any uncollected retrospective state levies, aiming to lower the fiscal burden and boost investment in the mining sector.

2.3.1.2 Coal Mines (Special Provisions) Act, 2015

Enacted after the Hon'ble Supreme Court cancelled 204 legacy blocks, it provided the statutory basis to re-allocate the cancelled mines (Schedules I–III) through transparent auction and allotment process and established the Nominated Authority. It underpinned ten auction tranches and nine allotment rounds up to 2020.

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2.3.2 Coal Sector Policies

India's coal sector has undergone significant policy reforms aimed at enhancing production, efficiency, transparency, sustainability, and private sector participation. The National Mineral Policy, 2019 provides the overarching framework for scientific mining, technological modernization, enhanced exploration, environmental protection, and ease of doing business. The Commercial Coal Mining Policy, 2020 removed end-use restrictions, enabled open-market coal sales, and allowed 100% FDI under the automatic route to encourage investment and competition. The SHAKTI Policy introduced transparent coal linkage allocation for thermal power producers, while its 2025 revision streamlined allocation through two windows and removed the PPA requirement for Window-II. Complementing these measures, the National Coal Gasification Mission targets gasification of 100 MT of coal by 2030 through financial incentives and long-term linkage support to promote cleaner coal utilization and reduce import dependence. The government is also reviving abandoned coal mines through a revenue-sharing model that leverages private sector efficiency and scientific closure guidelines. Further, the Integrated Coal Logistics Plan, 2030 seeks to improve coal evacuation and reduce transportation costs through multimodal logistics infrastructure and extensive First Mile Connectivity projects, while the National Coal Distribution Policy continues to provide the foundation for equitable coal allocation and FSA-based coal supply to non-power consumers, even as SHAKTI has largely replaced it for the power sector.

2.3.3 State-Level Laws and Implementation

State Governments play a crucial role in the implementation and governance of coal mining activities by facilitating land acquisition, granting statutory approvals, administering mining leases, supporting rehabilitation and resettlement, and developing infrastructure in mining regions. They also collect royalties (14% on ad- valorem) and other mining-related levies, including District Mineral Fund (DMF) (10% of Royalty for mines allocated post January 2015 and 30% for mines allocated prior to January 2015) and National Mineral Exploration and Developtment Trust (NMEDT) (3% of Royalty) contributions, while promoting community development and regulatory compliance. Major coal-producing states such as Odisha, Jharkhand, Chhattisgarh, West Bengal, Madhya Pradesh, and Telangana are central to India's coal production and resource development.

2.3.4 Environmental Regulations

Environmental compliance is a critical component of coal mining in India and is governed by the Environment (Protection) Act, 1986, Forest (Conservation) Act, 1980, Wildlife (Protection) Act, 1972, and the EIA Notification, 2006. Mining projects are required to obtain environmental, forest, and wildlife clearances, where applicable, before commencing operations. These regulations aim to minimize ecological impacts, protect forests and biodiversity, and ensure sustainable development of coal resources.

2.3.5 Market Structure of Indian Coal Sector

India's coal sector operates through a collaborative framework involving central and state governments alongside private sector participants. The Central Government is primarily responsible for policy formulation, regulation, and national-level oversight, while State Governments facilitate mineral administration, project implementation, and resource governance. Coal production and end-use are supported by a mix of public sector enterprises, captive mine operators, commercial miners, and power generation companies, reflecting the sector's evolving and increasingly diversified structure.

Figure 2.8 Structural overview of coal sector in India

Value chain ↓ / Ownership →	**Central Government**	**State Government**	**Private Sector**
Policy & Regulatory *Laws & oversight*	• Ministry of Coal (MoC) • Nominated Authority • Coal Controller's Organisation (CCO)	• State Depts. of Geology & Mining (mineral administration)	• *Regulation is a Government function*
Production *Mining & supply*	• **Coal India Ltd (CIL)** • NLC India (NLCIL) • NTPC Ltd	• Singareni Collieries (SCCL) • APMDC • GMDC, and other state PSUs	• Captive: Tata, Vedanta, Jindal Steel & Power, etc. • Commercial: Adani, Jindal Steel & Power, Aurobindo, etc.
Consumption *End use*	• Central power gencos (e.g., NTPC)	• State-owned power generation companies	• Captive users in end-use industries: power, DRI (sponge iron) & cement

Source: Crisil Intelligence; GMDC: Gujarat Mineral Development Corporation, APMDC: Andhra Pradesh Mineral Development Corporation

2.3.5.1 Evolution of market structure

Successive policy reforms, including the 2014 Supreme Court cancellation of coal block allocations, the introduction of CMSP auctions in 2015, commercial coal mining in 2020, and captive-use liberalization in 2021, have transformed coal block allocation from a nomination-based system to a transparent, competitive auction framework. While Coal India Limited (CIL) continues to account for nearly three-fourths of India's coal production and remains majority government-owned, the contribution of captive and commercial mines has increased significantly, rising from 10.9% of national production in FY2022 to 20.2% in FY2026. Coal is now supplied through multiple channels, including FSA and SHAKTI linkages at notified prices, e-auctions at market-driven premiums, and output from captive and commercial mines, with pricing benchmarks supported by the National Coal Index.

2.3.5.2 Coal sales channels

India's coal production landscape comprises four key categories of coal blocks: CIL/SCCL-operated mines, captive coal blocks, commercial coal blocks, and abandoned/discontinued mines. Coal India Limited (CIL), its subsidiaries, and SCCL continue to dominate domestic coal production, accounting for the majority of coal output in the country. Captive coal blocks are allotted to end-use sectors such as power, steel, cement, and other industries, with recent reforms permitting operators to commercially sell surplus coal after meeting captive requirements. The introduction of commercial coal mining in 2020 liberalized the sector by allowing auction-based allocation of coal blocks without end-use restrictions, enabling miners to sell coal freely in the open market. To revive idle assets and enhance domestic production, abandoned and discontinued mines are being redeveloped under a revenue-sharing model, with 24 of 34

identified mines already awarded[45] as of Fiscal 2024, representing approximately 18 MTPA peak rated capacity and 267 MT of extractable reserves. Collectively, these producer groups cater to the coal requirements of power generation, steel, cement, sponge iron, and other industrial sectors. Coal marketing in India is primarily undertaken through linkage and non-linkage channels. Under the linkage route, coal is supplied to the power sector under the Revised SHAKTI framework at notified prices and to non-regulated sectors through linkage auctions. Non-linkage coal is marketed through CIL's Single-Window e-Auction platform. Commercial coal miners have complete flexibility in choosing their sales mechanism, while captive miners can sell up to 50% of annual production in the open market after fulfilling end-use requirements, and abandoned mines can sell coal only through the auction mechanism stipulated in their respective contractual arrangements.

2.3.5.3 Demand Drivers and Market Dynamics

The power sector continues to be the largest consumer of coal in India, accounting for more than 70% of total coal demand. Other major demand centres include the steel, cement and sponge iron. Strong growth in electricity demand, industrial production, infrastructure development and urbanization continues to support long-term growth in coal consumption.

Coal production in India has increased substantially over the past decade, rising from around 610 million tonnes in fiscal 2015 to approximately 1048 million tonnes in fiscal 2025. The increase has been supported by policy reforms, capacity expansions, improved evacuation infrastructure and government initiatives aimed at reducing import dependence and enhancing domestic coal availability.

2.3.5.4 Industry Outlook

The Indian coal market is expected to gradually evolve from a highly concentrated public-sector-dominated structure towards a more diversified market with increasing participation from commercial miners. Continued auctioning of coal blocks, development of mining infrastructure, improvements in logistics capabilities and policy support for domestic coal production are expected to strengthen market competitiveness and improve supply availability. However, public sector producers are expected to retain their dominant position in the medium term owing to their extensive reserve base, established infrastructure and operational scale.

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2.3.6 Impact of Global Developments on Coal Sector and Renewable Energy Focus

The global energy landscape has been reshaped by climate commitments, geopolitical developments, technological advancements, and supportive policy frameworks, accelerating the adoption of renewable energy sources. Despite this transition, coal remains central to India's energy security, accounting for around 43% of installed power capacity and nearly 70% of electricity generation. The COVID-19 disruption and the 2022 global energy crisis reinforced India's focus on energy self-reliance, while coal demand is expected to grow to approximately 1.5-1.6 billion tonnes by 2030, driven by rising electricity demand, industrialization, urbanization, and infrastructure development. Consequently, India's energy transition is expected to be gradual, with coal continuing to play a critical role even as coal PSUs diversify into renewable energy (a 15 GW target by 2030[46]), coal gasification, carbon capture, and other cleaner technologies, while the Economic Survey flags that any faster phase-down would raise dependence on imported critical minerals for renewable energy and storage.

2.3.6.1 Impact of International Developments on Coal Sector

- Paris Agreement (2015): The landmark accord established a collective ambition to limit global warming to well below 2°C, with an aspirational target of 1.5°C. This commitment catalysed global efforts to reduce greenhouse gas emissions, directly impacting coal consumption and investment.
- China's Energy Transition (2017 onwards): As the world's largest coal consumer, China's strategic pivot to renewables manifested in aggressive targets for solar, wind, and battery storage that has reshaped global coal demand and pricing dynamics.
- European Union's Green Deal (2019): The EU's commitment to carbon neutrality by 2050, under the European Green Deal, has led to a rapid phase-out of coal-fired generation and substantial investments in renewables, influencing global trade flows and technology adoption.

[45] *Ministry of Coal*
[46] *Ministry of Coal*

- COVID-19 pandemic (2020): The pandemic triggered a sharp contraction in energy demand, resulting in reduced coal prices and accelerating policy support and investment towards renewable energy and cleaner technologies.
- COP26 Glasgow Climate Pact (2021): The Glasgow Climate Pact marked the first major international climate agreement to explicitly call for the phasedown of unabated coal power and the rationalization of inefficient fossil-fuel subsidies. The agreement reinforced global commitments towards decarbonization and accelerated investments in renewable energy technologies.
- Russia-Ukraine Conflict (2022): Ongoing hostilities continue to disrupt energy supply chains, with sanctions on Russian coal affecting European markets and prompting a realignment of global coal trade. Discussions around potential peace negotiations and sanctions relief remain a key uncertainty for coal exporters and importers.

2.3.6.2 Emerging Trends in Global Energy Transition

Recent years have witnessed increasing investments in green hydrogen, battery energy storage systems and low-carbon industrial technologies. Governments around the world are promoting energy diversification strategies aimed at balancing energy security objectives with decarbonization goals. At the same time, policymakers are increasingly focusing on ensuring a "just transition" by supporting workforce reskilling and economic diversification in coal-dependent regions.

Despite the growing prominence of renewable energy, coal continues to play a critical role in meeting baseload power requirements and supporting industrial activity, particularly in developing economies. Consequently, the global energy transition is expected to be gradual, with coal and renewable energy sources coexisting over the medium term as countries balance sustainability objectives with rising energy demand and energy security considerations.

2.3.7 Pricing Trends of Indian Non-Coking Coal

2.3.7.1 Pricing Framework of Non-Coking Coal in India

The pricing of non-coking coal in India is predominantly governed through a notified pricing mechanism administered by Coal India Limited (CIL), which contributes a significant share of the country's coal production. Unlike internationally traded non-coking coal, which is largely market driven, domestic non-coking coal prices are influenced by notified prices, government policies and regulatory interventions. The notified pricing mechanism is intended to ensure reliable and affordable coal supplies to the three key regulated sectors such as power, fertilizer and defence. The NCI serves as a benchmark for tracking coal prices across notified, auction and imported coal segments and is also used for revenue-sharing calculations in commercial coal block auctions.

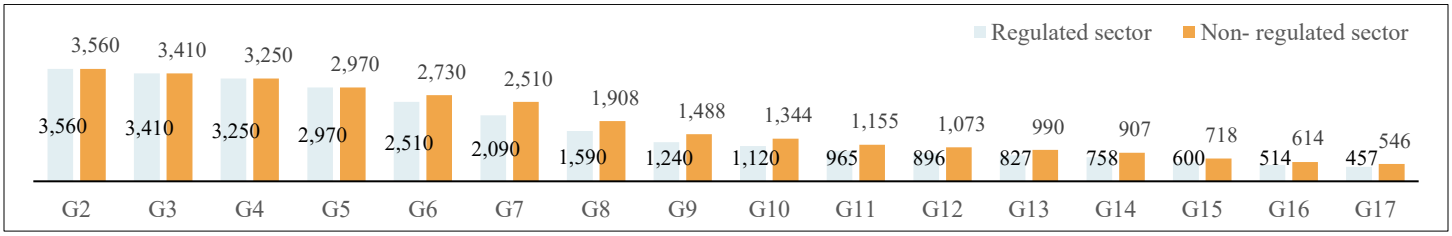
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2.3.7.2 Notified price structure by grade

The notified price of non-coking coal varies according to its GCV grade, with higher calorific value coal commanding a premium over lower-grade coal. There is significant price difference in the grade wise, notified price of coal in both regulated as well as non- regulated sectors in the tune of ₹3014 per ton. As of April 2025, notified prices (regulated sector) ranged from about ₹3,560 per tonne for G2 grade coal to about ₹457 per tonne for G17 grade coal. Notified prices generally remain stable and are revised periodically to account for changes in production costs, wage revisions and other input costs.

The current pricing framework has enabled relative stability in domestic non-coking coal prices compared with the significant volatility observed in international non-coking coal markets. Consequently, a substantial portion of coal supplied to the domestic power sector remains insulated from large fluctuations in global coal prices.

Figure 2.9 CIL notified price of non-coking coal by grade (₹ per tonne) for Fiscal 2025



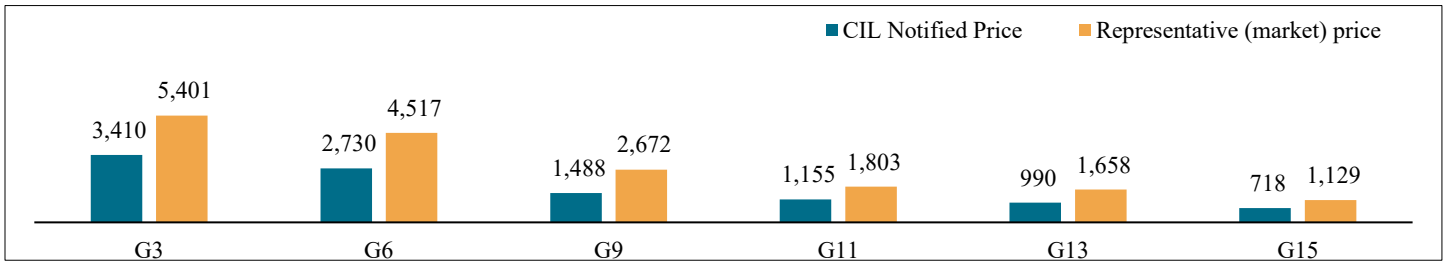
Source: CCO- Coal Directory 2024-25, Pit Head (Run of Mine) Price (₹ Per Tonne) of Non-Coking Coal of Coal India Limited (Excluding WCL), applicable to Power utilities (including CPPs)

2.3.7.3 Notified versus representative price

The Representative Price (RP) of coal is a monthly volume-weighted average derived from notified prices, e-auction prices, and import prices, and serves as the basis for calculating revenue-sharing and premium payments by commercial coal miners. It generally remains higher than notified prices due to the influence of e-auction premiums and import-parity pricing. The price differential is particularly significant for higher-grade coal, where competition with imported non-coking coal is stronger.

This premium acts as the principal mechanism through which changes in domestic demand-supply dynamics and global non-coking coal prices are transmitted into domestic coal market realizations.

Figure 2.10 CIL notified price vs. representative (market) price, selected grades (₹ per tonne) Fiscal 2025



Source: Ministry of Coal

2.3.7.4 Key Influencers and Drivers

India's non-coking coal prices are influenced by regulatory, market, and operational factors. Coal India's notified pricing mechanism and dominant market position provide relative price stability, while coal grade, calorific value, and statutory levies such as royalty, DMF, NMET, GST, and other taxes significantly affect landed costs. Market-linked prices are driven by e-auction premiums, international non-coking coal prices, and domestic demand-supply dynamics, with production levels, inventories, power demand, industrial activity, and global coal benchmarks influencing price realizations. Additionally, mining costs, wages, transportation expenses, railway availability, and coal evacuation infrastructure impact production economics and delivered prices.

Going forward, prices are expected to be shaped by rising electricity demand, continued dependence on coal-based power generation, growth in domestic coal production, and import-substitution initiatives. While notified prices are likely to continue providing stability, auction-based prices will remain sensitive to market conditions. Increasing participation by commercial miners, evolving pricing mechanisms, infrastructure improvements, and policy or taxation changes are expected to influence the sector's pricing dynamics over the medium term.

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2.4 Economic Survey and Union Budget: Impact on Infrastructure, Coal, and Power Sectors

2.4.1 Infrastructure

The Union Budget 2025-26 reaffirmed the Government of India's focus on infrastructure-led economic growth by allocating approximately ₹11,210 billion towards capital expenditure, equivalent to around 3.1% of GDP. The Government has also increased effective capital expenditure, including budgetary, internal and extra-budgetary resources, to approximately 5.5% of GDP, reflecting its continued commitment towards asset creation and crowding-in private investments. Further, grants-in-aid for the creation of capital assets have been budgeted at approximately ₹4,270 billion, representing a significant increase over the previous fiscal year.

2.4.2 Coal Sector

Coal remains a cornerstone of India's energy system, and the Government continues to focus on increasing domestic production, improving logistics infrastructure, and enhancing energy self-sufficiency. Key initiatives include the National Coal Gasification Mission, development of coal evacuation infrastructure, expansion of railway and first-mile connectivity, and regulatory reforms supporting commercial mining. While challenges related to clearances, technology adoption, environmental compliance, and coking coal imports persist, opportunities in coal gasification, CBM, and CMM are expected to drive diversification and value addition.

2.4.3 Power Sector

India's power sector is expanding due to industrialization, urbanization, and rising electricity demand. Although renewable capacity is set to grow substantially, its output remains intermittent and weather-dependent, making thermal power essential for grid reliability, peak demand support, and energy security. Government efforts in renewables, grid and transmission infrastructure, and cleaner coal technologies are expected to enable a balanced energy transition while maintaining reliable power supply.

2.4.4 Fiscal and Policy Outlook

The Union Budget FY2026 reinforces the Government's focus on infrastructure-led growth, energy security, and domestic resource utilization through continued capital expenditure and industrial development. Investments in infrastructure, logistics, manufacturing, mining, transportation, and power are expected to support demand from key coal-consuming sectors such as power, steel, cement, and manufacturing. Despite fiscal consolidation and the push for cleaner technologies, coal is expected to remain a key source of reliable baseload power, supporting medium-term demand growth even as renewable energy's share of installed capacity increases.

2.5 India's energy requirements

India's energy demand is expected to grow strongly as it advances toward its Viksit Bharat 2047 vision, supported by a population of over 1.4 billion[47], rapid urbanization, industrialization, and rising incomes. According to the Energy Institute Statistical Review of World Energy (2026), global total energy supply increased from 523.3 EJ in 2015 to 600.3 EJ in 2025 (1.4% CAGR). Emerging economies, particularly China and India, account for nearly 70% of incremental global energy demand growth.

India's primary energy supply rose from 27.4 EJ in 2015 to 39.1 EJ in 2025, recording a 3.6% CAGR, significantly higher than the global average. India's share of global energy supply increased from 5.2% to 6.5% during the period, while it added 11.7 EJ of energy supply, exceeding the annual energy consumption of several major industrial economies. In 2025, India ranked as the fourth-largest energy consumer among the countries listed, behind China (162.2 EJ), the USA (93.8 EJ), and Russia (31.2 EJ), highlighting its growing role in global energy markets.

The region-wise share of total energy supply with major economies are as given below:

Table 2.1 Global Total Energy Supply

Country	2015 (EJ)	2025 (EJ)	Growth Rate (2015-25)	% Share (2015)	% Share (2025)
USA	91.53	93.83	0.2%	17.47%	15.6%
China	118.41	162.19	3.2%	22.61%	27.0%
Russia Federation	27.85	31.19	1.1%	5.32%	5.2%
India	27.41	39.1	3.6%	5.23%	6.5%
Japan	18.76	16.48	-1.3%	3.58%	2.7%
Germany	12.91	10.04	-2.5%	2.46%	1.7%
France	10.35	9.02	-1.4%	1.98%	1.5%
Others	216.58	238.46	1.0%	41.35%	39.7%
World Total	**523.80**	**600.31**	**1.40%**		-

Source: Energy Institute Statistical Review of World Energy (2026)

Structural Drivers of India's Energy Demand

The sustained expansion of India's energy requirement is underpinned by three structural megatrends:

- Aggressive Infrastructure & Housing Development: The Government of India's record ₹11.21 trillion capital expenditure program in Fiscal 2026 (projected to rise to ₹12.2 trillion in Fiscal 2027)[48] is driving unprecedented construction activity. This has triggered exponential demand for steel, cement, and non-ferrous metals, all of which are highly energy-intensive manufacturing processes.
- The Electrification of Transport and Digital Infrastructure: The rapid adoption of Electric Vehicles (EVs) and the establishment of high-density AI data centers across tier-1 cities are introducing highly power-intensive new demand segments to the national grid.

[47] *https://www.worldometers.info/world-population/india-population/*
[48] *Union Budget FY 2026-27*

- Latent Residential Demand: Universal household grid connectivity (via the Saubhagya scheme) paired with rising disposable incomes has unlocked massive latent demand for cooling (air conditioning) and consumer durables in rural and semi-urban India.

India's Electrical Energy requirements and availability

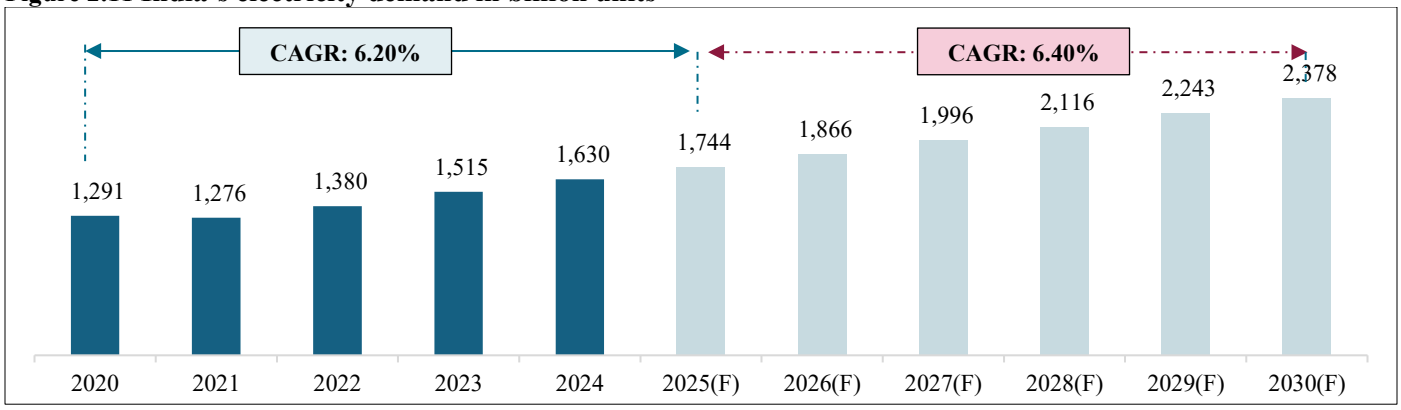
According to the 20th Electric Power Survey (EPS) published by the Central Electricity Authority (CEA), India's electrical energy requirement is projected to experience a massive structural expansion over the medium term.

- Historical Baseline: In Fiscal 2024, India's electrical energy requirement stood at 1,630 Billion Units (BU).
- Medium-Term Projection: Driven by the government's manufacturing push, EV penetration, and rising urban consumption, the national energy requirement is projected to grow to 2,378 BU by Fiscal 2030, representing a robust CAGR of ~6.4%.
- Long-Term Projection: The CEA's National Electricity Plan (NEP) projects this requirement to expand further to 2,538 BU by Fiscal 2032.[49]

This rapid rise in absolute demand presents a dual scenario for the country. While it reflects a thriving economy, it also highlights the challenge of meeting this demand solely through renewable sources. To bridge this gap and prevent chronic power deficits, India plans to add 80 GW of new thermal power capacity by Fiscal 2032[50], guaranteeing that coal will remain the cornerstone of India's energy mix for decades to come.

The analysis of India's electricity demand from 2020 to 2030 shows a steady increase in demand, with electricity consumption expected to grow at a CAGR of approximately 6.3% over the period.

Figure 2.11 India's electricity demand in billion units



Source: Central Electricity Authority- Annual Report of various years, Crisil Intelligence; All years are fiscal years, F: Forecast

Per Capita Energy Consumption: Despite its massive economic scale, India's per capita total energy supply (26.8 GJ/person) is only ~37% of the global average (72.9 GJ/person) and nearly one-tenth of the US average (270.2 GJ/person). As India's urban population expands and industrialization intensifies, this gap represents a guaranteed, multi-decadal demand driver.

Table 2.2 Per Capita Total Energy Supply in major economies

Country/ Region	Consumption 2015 (GJ/person)	Consumption 2025 (GJ/person)	10-Year CAGR (2015–2025) (%)
United States	280.7	270.2	-0.4%
Russian Federation	191.7	216.7	1.2%
Japan	147.4	133.9	-1.0%
European Union (EU)	118.4	105.9	-1.1%
China	84.8	111.9	2.8%
South Africa	89.5	77.7	-1.4%
Brazil	58.6	55.4	-0.6%
South America	51.2	48.8	-0.5%
India	20.6	26.8	2.7%
World Average	70.1	72.9	0.4%

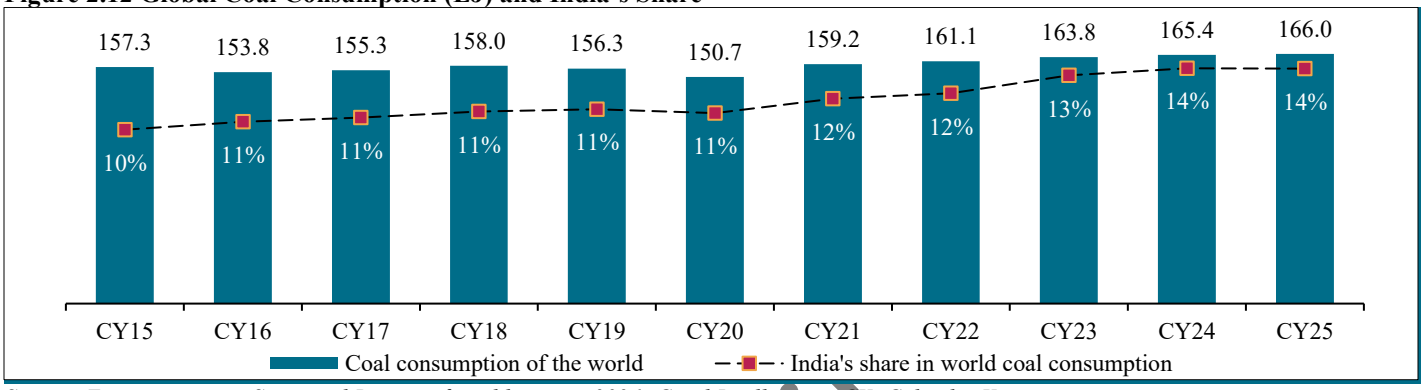
[49] *As per CEA, Load Generation Balance Report 2024-25*
[50] *https://www.pib.gov.in/PressReleasePage.aspx?PRID=2037006&reg=48&lang=2*

Source: Energy Institute Statistical Review of World Energy (2025/2026); UN Energy Statistics Database; World Bank
Note: Primary energy consumption is calculated using the Physical Energy Content method to ensure comparability across fossil and non-fossil fuels. 1 Gigajoule (GJ) = 277.78 kWh.

2.6 Coal's dominance in India's energy and power sectors with share of consumption

India's coal consumption has grown alongside its economic expansion, reflecting rising energy demand driven by industrial and infrastructure development. By 2025, India accounted for 14% of global coal consumption, making it the second-largest consumer after China (56%). Coal consumption increased from 16.2 EJ in 2013 to 23.1 EJ in 2025, representing a 10-year CAGR of 3.6% and highlighting the country's growing energy needs.

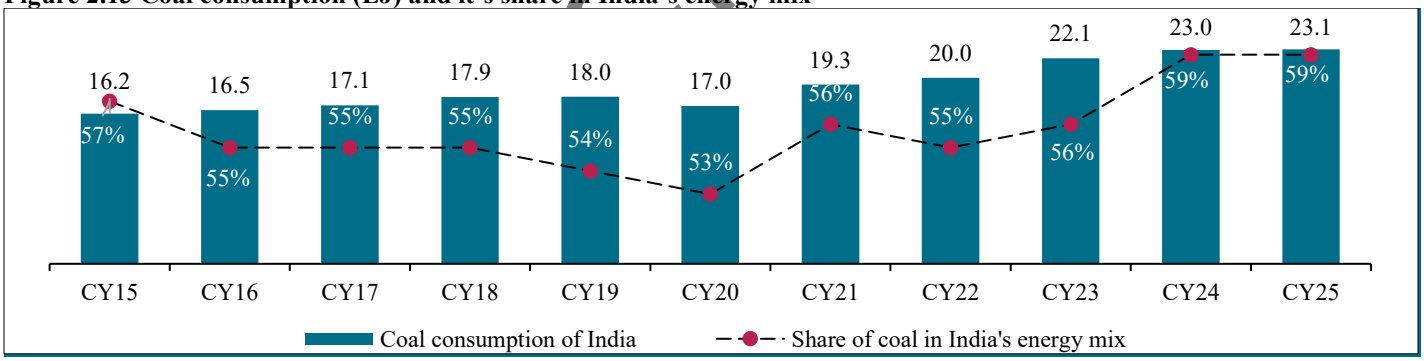
Figure 2.12 Global Coal Consumption (EJ) and India's Share



Source: Energy institute: Statistical Review of world energy, 2026; Crisil Intelligence, CY- Calendar Year

Coal's share in India's primary energy mix has remained largely stable at around 57% since 2015, fluctuating between 53% and 59%. This underscores its continued importance in power generation and heavy industry and suggests it will remain central to economic growth. However, rising coal use also increases carbon emissions, highlighting the need for cleaner technologies, renewable energy adoption, and stronger environmental policies.

Figure 2.13 Coal consumption (EJ) and it's share in India's energy mix



Source: Energy institute: Statistical Review of world energy, 2026; Crisil Intelligence, CY- Calendar Year

Between 2015 and 2025, India's coal consumption witnessed a CAGR of 3.6%. The steady increase reflects the nation's expanding energy needs, driven by industrial growth and urbanization. The growth in coal consumption suggests a persistent reliance on coal as a primary energy source in India. This dependency is critical for understanding the country's energy security strategies, particularly as India seeks to balance its energy needs with environmental commitments.

2.7 Indian coal demand supply scenario

2.7.1 Demand of Coal

Coal is a useful source of energy not only for the power sector (utilities and CPPs) but also for others such as steel, direct reduced iron (DRI), sponge, cement and bricks. The power sector comprising power utilities and captive power plants (CPPs) accounted for ~72%

of coal consumption in fiscal 2025[51] and, thus, is central to the outlook for coal in the country. The cement industry, DRI, paper and brick manufacturing, among others, are end-use / heat-consuming sectors related to coal.

- The Power Sector as the Primary Driver: The power sector, comprising utility-scale thermal power plants and industrial Captive Power Plants (CPPs), remains the overwhelming driver of domestic coal consumption. In Fiscal 2025, the power sector accounted for ~72% of total domestic coal dispatches (with utilities alone taking ~830 MT out of a total 1,025 MT domestic dispatch)[52], making its operational performance central to the medium-term outlook of the domestic coal mining industry.
- Non-Regulated Sectors (NRS): Beyond electricity generation, coal is a critical process fuel and reactant for heavy industries that underpin India's infrastructure expansion. These include:
  - Steel & Direct Reduced Iron (DRI) / Sponge Iron: Non-coking coal is widely used in sponge iron kilns, which have grown at a robust pace to support the National Steel Policy's target of 300 MTPA capacity by 2030.
  - Cement, Paper, and Brick Manufacturing: These heat-consuming, energy-intensive sectors rely heavily on non-coking coal for kiln firing and steam generation.

Table 2.3 India's coal demand by end-use sectors fiscal 2025

End Used Sector	% demand
Power (Utility)	71%
Power (Captive)	5%
Steel + Coke Oven	5%
Cement	1%
Sponge	1%
Others	17%

Source: Ministry of Coal Annual Report 2025-26; Others include imports as well which are being used in Power, Power (Captive), Cement, Steel-DRI etc. and hence the actual share of these sectors may vary.

With rapid economic growth, India's future energy requirement is expected to increase rapidly. The power sector, being the single largest consumer of coal, is likely to be one of the major segments shaping the demand for fuel in future. In addition, demand from industries such as steel and cement, which are key to infrastructure development, will also see a rise in demand for coal. India's power demand in fiscal 2026 was recorded at 1,709 billion units, and it is projected to surge to 2,473 billion units by 2031 and to 3,365 billion on units by 2036[53], reflecting a 6-year CAGR of 8% from 2026 to 2031. However, the proportion of this demand met through coal power plants is expected to decline, driven by the substantial increase in the installed capacity of renewable energy sources. The Plant Load Factors (PLFs) for renewable energy sources, which were between 18-22% in 2026, are anticipated to rise to 22-25% by 2031 and to 28-30% by 2036 contributing to the change in technology and increase in the share of power generated through renewable energy. The Government of India has set an ambitious target to achieve 500 GW of installed renewable energy capacity by 2030, as part of its commitment to transition towards a low-carbon economy. The goal aligns with India's broader climate objectives under the Paris Agreement and is aimed at reducing the carbon intensity of its economy while ensuring energy security.

Table 2.4 India – Installed power capacity from different sources (in GW) in fiscal 2026

End Used Sector	% demand
Coal	43%
Gas & Diesel	4%
Nuclear	2%
Hydro	10%
Solar	28%
Wind	10%
Other RES	3%

Source: CEA- All India Electricity Statistics - General Review

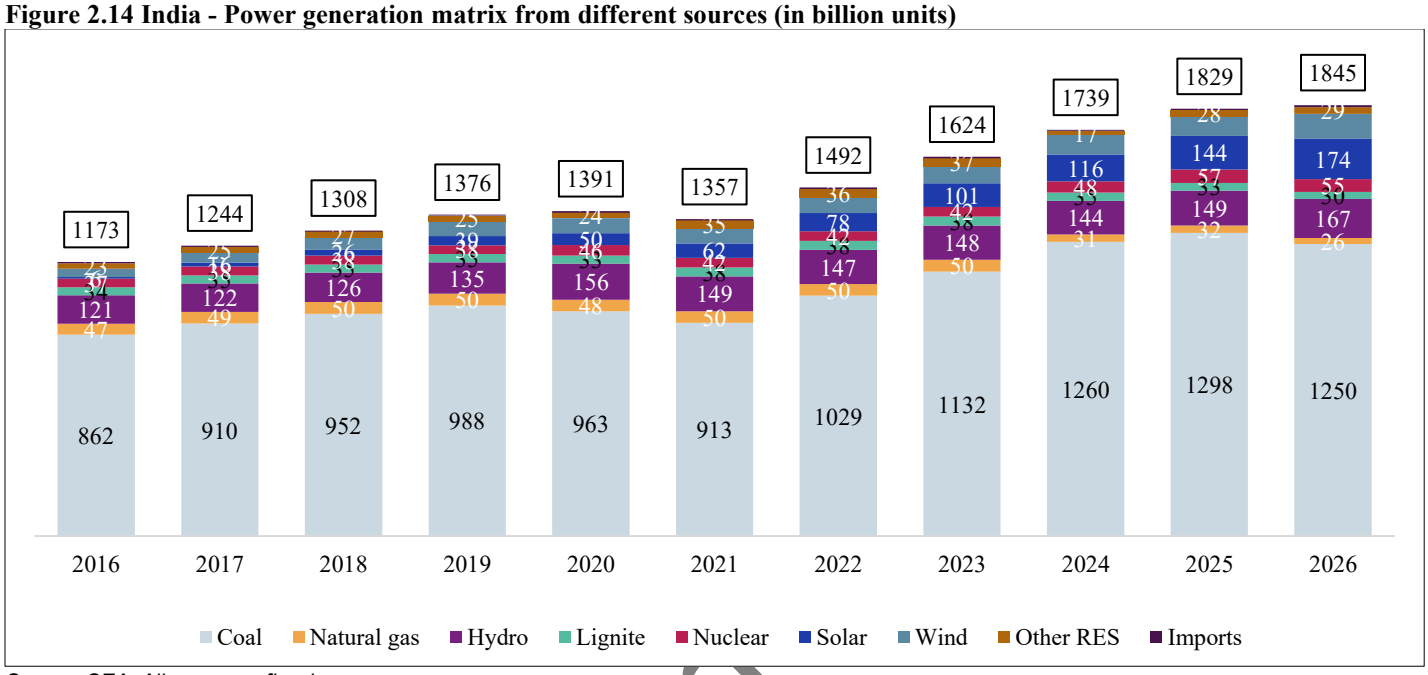
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[51] *Actual demand as per Annual Report 2024-25 of Ministry of Coal*
[52] *Ministry of Coal: Monthly Coal Statistics for Mar'2026 (Provisional)*
[53] *As per CEA estimation*

India's Electricity Generation Mix

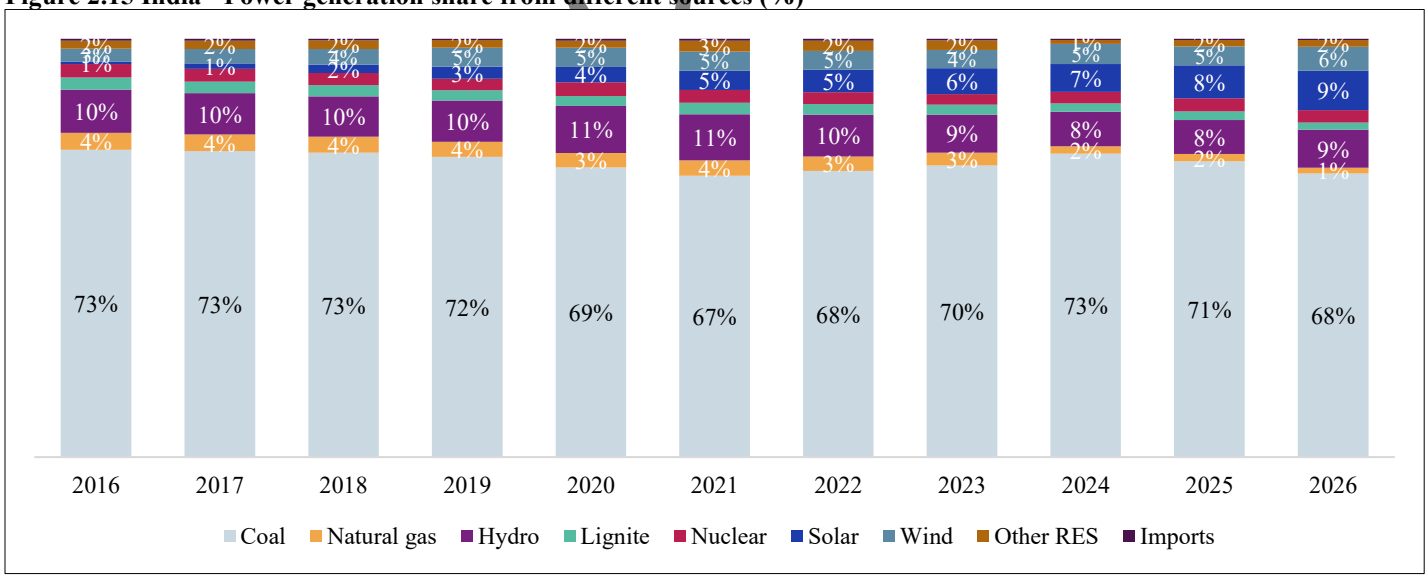
In fiscal 2026, coal + Lignite based generation declined for the first time by 4%, dropping from 1,331 BU in fiscal 2025 to 1,281 BU, while oil and gas generation also saw a sharp 17% decline during the same period. Among all sources, wind recorded the highest growth at 27% (from 83 BU in fiscal 2025 to 106 BU in fiscal 2026), followed by solar at 20%, increasing from 144 BU in fiscal 2025 to 174 BU in fiscal 2026.[56]

Figure 2.14 India - Power generation matrix from different sources (in billion units)



Source: CEA; All years are fiscal years

Figure 2.15 India - Power generation share from different sources (%)



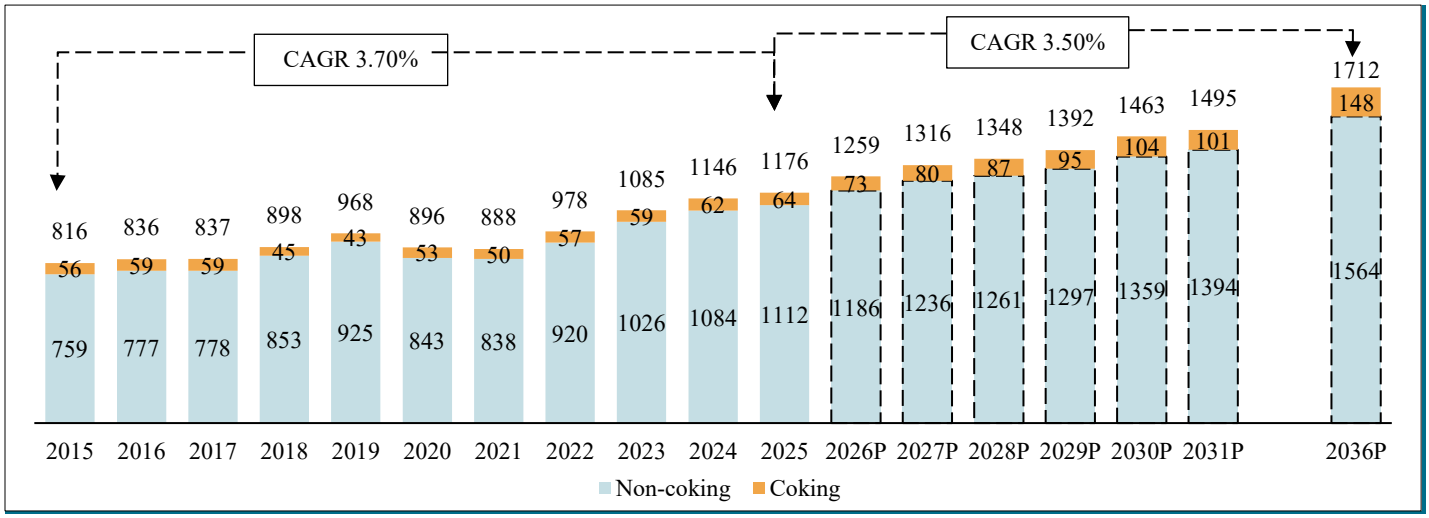
Source: CEA; All years are fiscal years

According to the Central Electricity Authority (CEA), as of Fiscal 2025/2026, coal-fired thermal power plants continue to supply 68%-70% of India's actual electricity generation, despite accounting for only 43% of the installed capacity. This structural divergence is driven by the low-Capacity Utilization Factors (CUFs) of solar and wind energy (typically 15% to 22%), which are subject to daily and

seasonal intermittency. A long-term structural analysis of India's power sector highlights the enduring dominance of coal-based utility generation, even amidst the rapid scaling of the country's renewable energy capacity. In Fiscal 2016, coal-fired power generation stood at 862 Billion Units (BU), accounting for approximately 73% of the total electricity generation of 1,173 BU. Over the subsequent decade, driven by intense industrialization and urbanization, absolute coal-based generation expanded to 1,250 BU in Fiscal 2026, representing 68% of the total 1,844 BU generated. In fiscal 2026 India's coal (incl. lignite) production reached 1.08 billion tonne, recording a slight decline of 1% compared to the previous year's production of 1.09 BT. The total coal imported by the thermal power plants in fiscal 2026 was 45.4 Million Tonnes (MT) as compared to 62.5 MT in fiscal 2025 with a decline of around 27.4%.[54]

Reflecting India's robust industrial expansion and rising baseload power requirements, domestic coal demand has grown at a steady 10-year CAGR of 5.5% between Fiscal 2016 and Fiscal 2026 (First Advance Estimates), rising from 842.9 MT to 1,443 MT. Notably, the post-pandemic economic resurgence significantly accelerated this trajectory, with domestic coal demand expanding at a five-year CAGR of 9.80% between Fiscal 2021 and Fiscal 2026 (up from 906.1 MT), driven by a surging utility power sector.[55] While the estimation of demand has been done at a levelized grade of G10, the actual demand for raw coal will be higher as Indian coal average production was G11 and going forward the grade is expected to further reduce. Only non-coking coal has been levelized.

Figure 2.16 Overall coal demand in India: non-coking coal and coking coal (MT)



Source: Crisil Intelligence; All years are fiscal years; P: Projected; Note: demand for coal is based on the G10 grade of coal for Power and CPP sectors

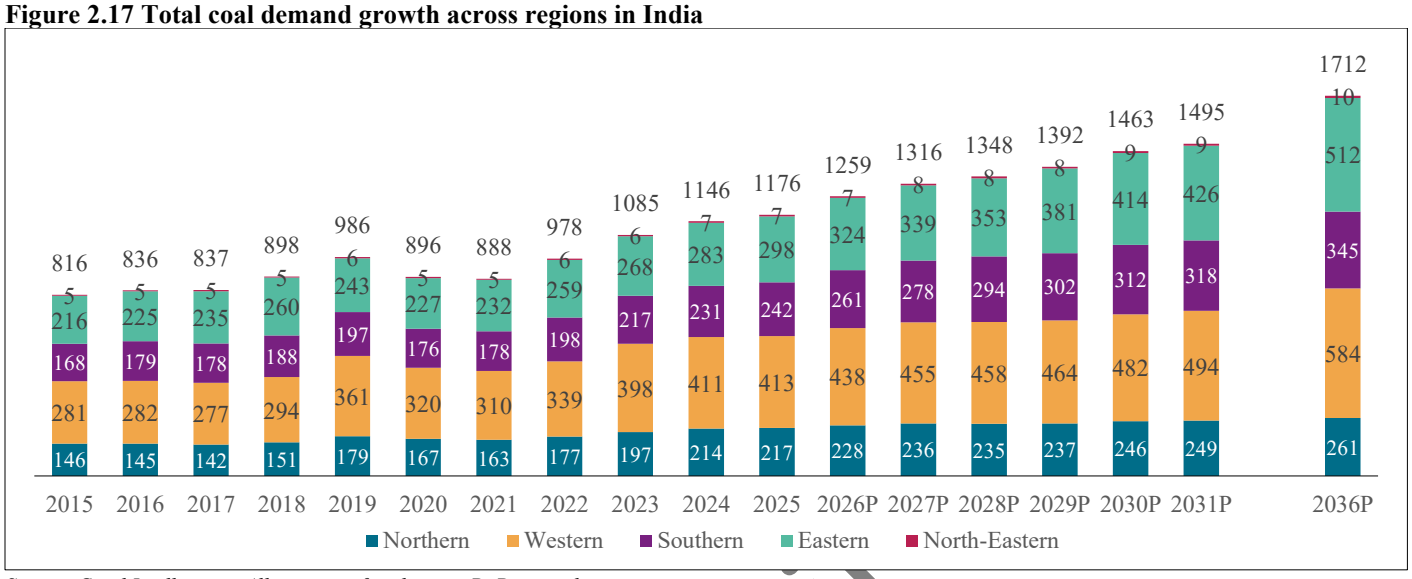
India's coal demand has risen consistently over years, with significant growth in both non-coking and coking coal consumption. Total levelized coal demand in fiscal 2020 was 896 MT (for levelized grade at G10), with non-coking coal comprising 843 MT and coking coal accounting for 53 MT. By fiscal 2025, levelized demand rose to 1,176 MT, with non-coking coal at 1,112 MT and coking coal at 64 MT (a substantial jump of 32% in non-coking coal and 20% in coking coal, due to power demand). Total levelized coal demand is expected to be 1,495 MT[56] by Fiscal 2031 (1,394 MT from non-coking coal and 101 MT from coking coal) and 1,712 MT by fiscal 2036 (non-coking coal at 1,564 MT and coking coal at 148 MT). This implies a CAGR of 4.1% between fiscals 2025 and 2031 and 3.5% between fiscals 2025 and 2036.

Non-coking coal is expected to continue accounting for the majority of India's coal consumption and will remain critical for supporting industrial growth and energy security. Apart from power generation, non-coking coal is extensively used in sponge iron (DRI) production, cement manufacturing, captive power generation and various industrial processes. India is the world's largest producer of sponge iron, and a significant proportion of DRI units rely on domestic non-coking coal as both a fuel and reducing agent. Further, industries such as cement, aluminium, paper, brick kilns and ferro-alloys depend on non-coking coal for their energy requirements. Therefore, sustained growth in industrial activity, infrastructure development and manufacturing output is expected to support robust

[54] *As per Central Electricity Authority (CEA) Report, Apr 28, 2026*
[55] *Demand data as per Ministry of Coal Annual Report Fiscal 2026 (COAL AND LIGNITE PRODUCTION)*
[56] *Demand calculated at G10 grade for Power, CPP, Cement and other sectors except Steel/ coking coal grades*

demand for non-coking coal over the long term. Despite the increasing share of coking coal in overall coal demand, non-coking coal will continue to remain the dominant component of India's coal consumption basket, supporting the country's expanding industrial base and electricity requirements. Demand estimated for northern, eastern, southern, western and north eastern regions are 18%, 25%, 21%, 35% and 0.6% respectively.

Figure 2.17 Total coal demand growth across regions in India



Source: Crisil Intelligence; All years are fiscal years; P: Projected

Table 2.5 Source-wise coal demand in India (MT)

Sector	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026P	2027P	2028P	2029P	2030P	2031P	2036P	CAGR 2015-25	CAGR 2025-36P
Power Utilities	429	469	478	520	571	491	490	560	641	695	698	746	770	779	798	826	843	886	5.0%	2.2%
CPP	62	39	44	66	81	113	113	118	125	131	143	159	173	181	187	211	226	292	8.7%	6.7%
DRI	30	20	16	20	25	37	34	37	43	46	47	49	50	51	51	52	47	61	4.6%	2.4%
Cement – Domestic	11	9	6	8	9	12	13	15	17	20	23	25	28	31	34	38	40	56	7.7%	8.4%
Other	64	85	89	78	55	99	95	102	106	111	117	122	128	133	140	145	150	181	6.2%	4.0%
Imported non-coking	163	155	145	161	184	91	93	88	94	81	84	85	87	86	87	87	88	88	-6.4%	0.4%
Total non-coking coal	**759**	**777**	**778**	**853**	**925**	**843**	**838**	**920**	**1,026**	**1,084**	**1,112**	**1186**	**1236**	**1261**	**1297**	**1359**	**1394**	**1,564**	3.9%	3.1%
Coking Coal	56	59	59	45	43	53	50	57	59	62	64	73	80	87	95	104	101	148	1.3%	7.9%
Total Coal Demand	**816**	**836**	**837**	**898**	**968**	**895**	**887**	**978**	**1,085**	**1,146**	**1,176**	**1259**	**1317**	**1348**	**1391**	**1463**	**1495**	**1,712**	**3.7%**	**3.5%**

Source: Crisil Intelligence; all years are fiscal year; Projection of coal demand at G10 grade of coal; P: Projected

Power utilities remain the largest consumer of coal in India, driven by the country's need to meet the growing energy demand. Despite the relatively modest growth rate of 11-year CAGR 2.2% from fiscal 2025 to fiscal 2036, this sector continues to account for a significant portion of coal demand, due to its established infrastructure and the ongoing reliance on coal-fired power plants for electricity generation. While captive power generation shows a robust growth rate, reflecting the increasing trend of industries to secure their energy requirement independently. The 11-year CAGR of 6.7% for fiscal 2025 to fiscal 2036 for CPP indicates that more industries, particularly in sectors such as iron and steel, aluminium, and cement, are investing in captive power plants to ensure reliability and cost-effectiveness. The increasing power generation capacity and requirement of other allied industries in India presents considerable growth and expansion opportunities for coal mining companies in India.

2.7.1.1 Demand drivers of coal

The demand for domestic coal in India is structurally resilient and dynamically driven by several macroeconomic, regulatory, and industrial factors. As the country targets a US$ 7 trillion economy by 2030, the demand for primary energy and industrial inputs is expanding rapidly. The major demand drivers shaping the long-term outlook for the Indian coal mining industry are detailed below:

1) **Surge in Power Utility Demand-**
   As India's aggregate and per capita electricity consumption continues to expand driven by rapid urbanization, a growing middle class, and the intensive electrification of transport and digital public infrastructure coal remains the indispensable anchor of the national grid. According to the Central Electricity Authority (CEA), India's total utility-scale electricity generation reached 1,845.92 Billion Units (BU) in Fiscal 2026, with coal-based power plants contributing 1,250.19 BU (accounting for a dominant 67.73% share). While India has made progress in commissioning renewable energy capacities, the physical limitations of solar and wind energy (such as intermittency and low-Capacity Utilization Factors of 15% to 22%) mean that they cannot independently support the grid during peak hours.
2) **Rapid Expansion of Thermal Power Capacity**
   To reliably meet the country's projected electricity requirements, the CEA conducts long-term generation planning and adequacy studies-
   - Current Installed Capacity: As of January 31, 2026, India's installed coal and lignite-based utility capacity stood at 227.8 GW (up from 217.50 GW in July 2024).
   - Medium-Term Requirement: According to the CEA's Generation Adequacy Study, India's coal and lignite-based installed capacity must reach 283 GW by Fiscal 2032 to reliably meet the projected national peak demand and baseload requirements.
   - Long-Term Requirement: The required coal-fired capacity is projected to expand further to 315 GW by Fiscal 2036.
   - Government Mandate: To bridge this capacity gap, the Government of India has proposed setting up an additional minimum of 80 GW of new coal-based thermal capacity by Fiscal 2032. This aggressive capacity expansion program guarantees a massive, long-term market for domestic coal developers.
3) **Capital Investments in Steel, Aluminium, and Cement**
   India's infrastructure-led growth strategy continues to drive a strong capital expenditure cycle, with central government capex increasing from a record ₹11.21 trillion in Fiscal 2026 to ₹12.2 trillion in Fiscal 2027. This investment is catalyzing capacity expansion across key industries, including steel, where production is targeted to reach 255 MTPA by 2031 from about 144 MTPA in Fiscal 2024, and cement, where capacity is expected to increase to 800 MTPA by Fiscal 2030 from approximately 595 MTPA in Fiscal 2024[57]. These sectors remain heavily dependent on coal, with non-coking coal playing a critical role in steel production and non-coking coal serving as the primary fuel for cement manufacturing, while the energy-intensive aluminium industry continues to rely on coal-based captive power for uninterrupted and cost-effective electricity supply.
4) **High Reliance and Absence of Viable Alternatives in Captive Power Plants (CPPs)**
   For heavy manufacturing industries, grid disruptions can result in severe operational and financial losses. Consequently, major industrial players rely heavily on self-generation through Captive Power Plants (CPPs) to secure a continuous, high-quality power supply.
   According to the CEA reports India's industrial captive power landscape is characterized by an overwhelming reliance on coal-fired steam generation:
   - Captive Capacity and Generation: The total installed capacity of industrial captive plants (for units with a demand of 0.5 MW and above) grew to 80,926.07 MW, generating 223,902.69 GWh (223.9 BU) of electricity.
   - Steam Power Dominance: Steam-based captive power plants—which overwhelmingly utilize coal—contributed 183,093.29 GWh, accounting for a massive 81.77% (nearly 82%) of India's total captive electricity generation.[58]

Table 2.6 Source-wise coal demand in India (MT)

[57] *IBEF, cement industry report, May-2026*
[58] *CEA's All India Electricity Statistics (General Review 2025)*

Crisil

Industrial Sector	Total Captive Generation (GWh)	Share of National Captive Mix (%)	Steam (Coal-Fired) Generation (GWh)	Reliance on Steam/ Coal Power (%)
Iron & Steel	60,957.00	27.22%	58,984.00	96.76%
Aluminium	51,782.81	23.13%	51,720.00	99.88%
Mineral Oil & Petroleum	20,748.29	9.27%	7,698.00	37.10%
Cement	18,523.39	8.27%	16,946.00	91.48%
Chemicals	16,294.59	7.28%	6,889.00	42.28%
Others *(Paper, Sugar, Textiles, etc.)*	55,596.61	24.83%	40,856.29	73.49%
Total Captive Landscape	**223,902.69**	**100.00%**	**183,093.29**	**81.77%**

Source: Central Electricity Authority (CEA) All India Electricity Statistics, General Review 2025 (released January 2026)

This industry-wise distribution highlights that India's core manufacturing sectors are highly coal-intensive. The Iron & Steel and Aluminium sectors alone account for over 50% of the country's total captive power generation, with their processes relying almost entirely (96.76% and 99.88% respectively) on coal-fired steam power. Because these sectors are central to India's manufacturing and infrastructure goals, coal remains the primary driver of industrial economic stability.

2.7.2 Supply of Coal

On the supply side, India's coal market is characterized by a dual-source structure consisting of domestic production and imported coal. Historically, this framework functioned as a structural duopoly, where domestic supply was heavily prioritized for inland utilities, while imported coal bridged the qualitative gap (coking coal for metallurgical steelmaking) and the quantitative gap (high-calorific non-coking coal for coastal power plants). However, under the Government of India's active Import Substitution Mandate, this dynamic is shifting structurally. Proactive policy measures, including the expansion of railway evacuation corridors, coal blending mandates, and the commercialization of domestic coal blocks aim to systematically replace substitutable non-coking coal imports with domestic production, thereby enhancing national self-sufficiency and conserving foreign exchange.

Domestic Production Landscape: Dominance of Public PSUs and the Rise of Private Mining

The domestic supply side is divided into three key categories:

1) Coal India Limited (CIL): A Maharatna PSU and the single largest coal producer in the world. CIL operates through ten wholly owned Indian subsidiaries, managing 295[59] across eight states in India (comprising opencast, underground, and mixed mining formats). CIL remains the undisputed anchor of India's coal supply, accounting for 73.81% of total domestic production (Fiscal 2026).
2) Singareni Collieries Company Limited (SCCL): Jointly owned by the Government of Telangana and the Government of India on a 51:49 equity basis, SCCL operates 39 active mines (17 opencast and 22 underground)[60] across the Pranahita-Godavari valley of Telangana. SCCL contributes approximately 6.59% to 5.57% of national coal output in Fiscal 2025 and 2026 respectively.
3) Captive and Commercial Coal Blocks: Representing the private sector and state-allocated blocks, this segment has emerged as the fastest-growing supply source. Commercial Blocks: Auctioned under the landmark 2020 commercial mining reforms, allowing private entities to mine and sell coal freely in the open market. As of Fiscal 2026, approximately 15 commercial coal mines have successfully commenced operations[61], with production scaling rapidly.

Table 2.7 Domestic Coal Production (PE) by Miner Category (Fiscal 2025 & Fiscal 2026)

Miner Category	Production 2025 (PE) (MT)	Production 2026 (FAE) (MT)	2025 Production Share (%)	2026 Production Share (%)	Operating Mines / Assets (2025/26)
Coal India Limited (CIL)	781.06	768.19	74.56%	73.81%	295 Mines
Singareni Collieries (SCCL)	69.01	58.00	6.59%	5.57%	39 Mines
Captive Coal Blocks	161.53	168.95	15.42%	16.23%	-
Commercial Coal Blocks	29.39	35.50	2.81%	3.41%	~15 Mines
Others (State PSUs/Misc.)	6.54	10.19	0.62%	0.98%	-
Total Domestic Production	1,047.5	1,040.83	100.00%	100.00%	-

[59] *Coal India Annual Report Fisacal 2025- 2026*
[60] *https://scclmines.com/scclnew/company_about-us.asp*
[61] *https://www.pib.gov.in/PressReleaseDetail.aspx?PRID=2286594&reg=6&lang=1*

Crisil

Source: Ministry of Coal, Provisional Coal Statistics; Coal Controller's Organisation (CCO); CIL & SCCL Annual Reports; CRISIL Intelligence Estimates
Note: MT – Million Metric Tonnes; PE – Provisional Estimates; FAE – First Advance Estimates (released January 2026).

The total raw coal production in India in Fiscal 2025 was 1047.5 MT from different sources with 5% increase from 997 MT in Fiscal 2024. Non-Coking Coal represents the overwhelming majority of India's domestic output. Because India's power sector relies heavily on coal for baseload electricity, domestic mining efforts are structurally geared toward maximizing non-coking coal output.

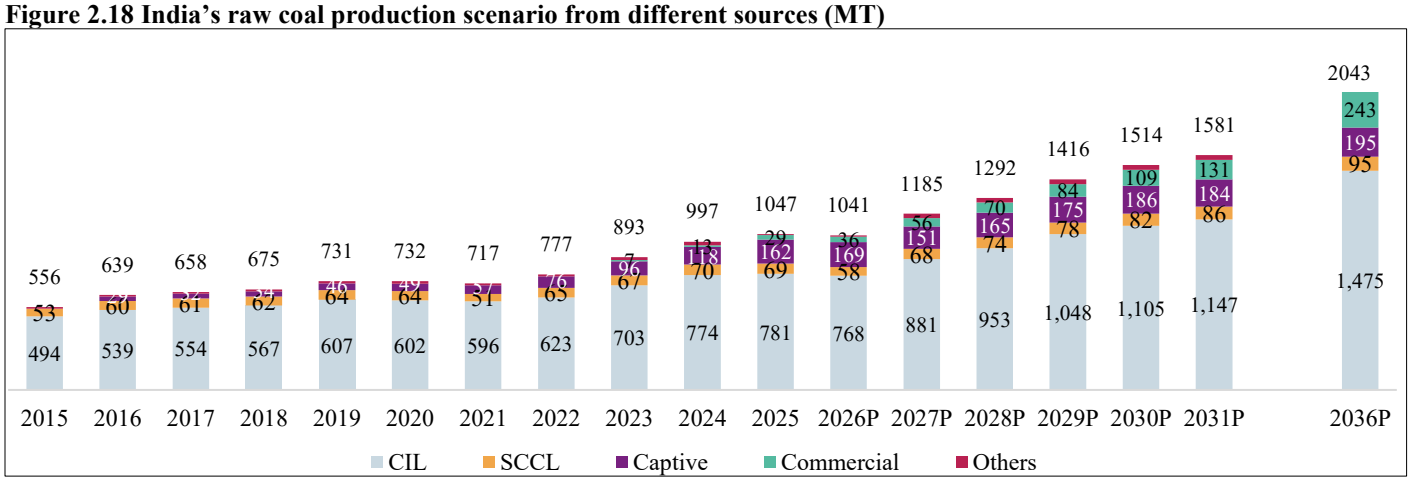
Table 2.8 Domestic Coal Production by type of coal (Fiscal 2022 to Fiscal 2026)

Coal Category	2022	2023	2024	2025 (PE)	2026(Target/Projected)	% Share of Production, 2025
Non-Coking Coal	726.51	832.43	931.01	981.03	974.90	93.65%
Coking Coal	51.70	60.76	66.82	66.47	65.93	6.35%
Total Domestic Production	778.21	893.19	997.83	1,047.50	1,040.83	100.00%

Source: Ministry of Coal, Government of India; Coal Controller's Organisation (CCO) Provisional Coal Statistics; PIB Year-End Review (2025)
Note: MT–Million Metric Tonnes; PE–Provisional Estimates; FY26 figures represent official targets set by the Ministry of Coal under the Annual Plan

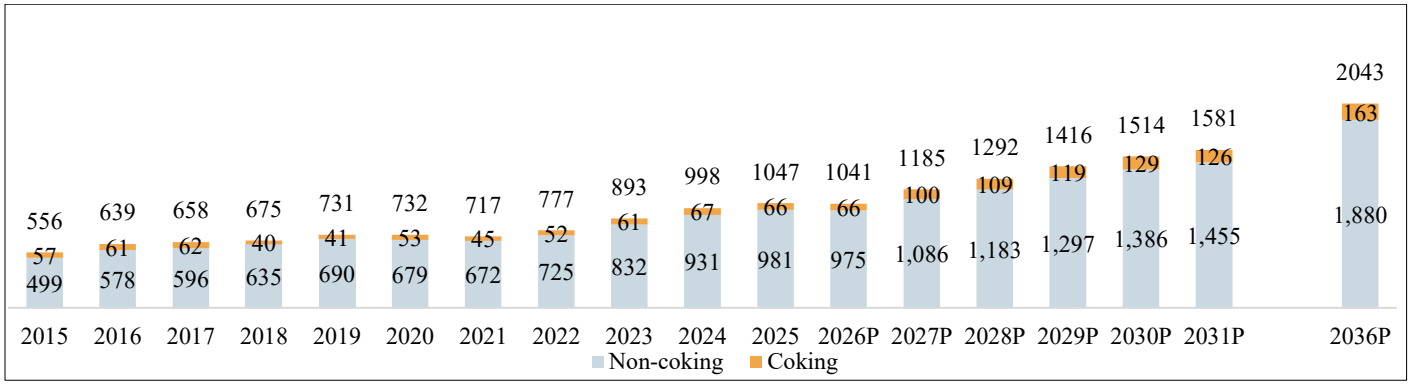
In fiscal 2025, total demand for raw coal in the country was 1,267 MT *(provisional),* where coal sourced from domestic sources accounted for 81% and the balance 19% was met through imported coal[62]. CIL and SCCL contributed ~850 MT of coal and the balance ~197.5 MT of coal is supplied by other private and public mining companies.

Figure 2.18 India's raw coal production scenario from different sources (MT)



Source: Past data as per Ministry of Coal-Coal Directory of India 2024-25, Projections as per Crisil Intelligence; Year is fiscal year; P: Projected

Figure 2.19 India's raw coal production coal type wise – non-coking and coking (MT)



Source: Past data as per Ministry of Coal-Coal Directory of India 2024-25, Projections as per Crisil Intelligence; Year is fiscal year; P: Projected

[62] *Ministry of Coal-Annual Reports 2024-25*

India produced ~1048 MT of raw coal in Fiscal 2025 and the raw coal supply has been growing at a 10-year CAGR of 6.5% from Fiscal 2015 to Fiscal 2024. Further, according to Crisil Intelligence estimates, raw coal production is expected to reach 1,581 MT by Fiscal 2031 growing at a 6-year CAGR of 7.1% from fiscal 2025 to Fiscal 2031. In case of non- coking coal, production expanded from 551.73 MT (Fiscal 2015) to 981.02 MT (Fiscal 2025), delivering an absolute increase of ~429.3 MT (+77.8%) at a Compound Annual Growth Rate (CAGR) of 5.92%. Growth accelerated post Fiscal 2021 following power sector reforms, dedicated coal corridor commissioning, mine developer-operator (MDO) rollouts, and commercial mine auction operationalizations (especially in MCL, SECL, and NCL basins).

Table 2.9 State wise raw coal production in Fiscal 2025

State	Coking Coal (MT)	Non Coking Coal (MT)	Total (MT)
Odisha		269	269
Jharkhand	66.12	140	206
Chhattisgarh	0.22	205	205
Madhya Pradesh	0.00	168	168
Telangana		72	72
Maharashtra		71	71
West Bengal	0.13	36	36
Uttar Pradesh		21	21
Assam		0.2	0.2
Jammu Kashmir		0.01	0.01

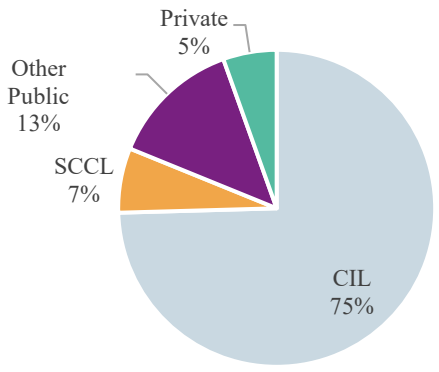
Source: Ministry of Coal-Coal Directory of India for 2024-25

In Fiscal 2025, Odisha emerged as the largest coal-producing state in India, accounting for approximately 269 MT, or around 26% of the country's total raw coal production. **MCL, with coal production of 225 MT, contributed nearly 84% of Odisha's total output, highlighting its dominant position in the state's coal sector**. Jharkhand and Chhattisgarh were the second and third largest coal-producing states, contributing approximately 206 MT (20%) and 205 MT (20%), respectively, followed by Madhya Pradesh with 168 MT (16%).

Coal India Limited (CIL) remained the dominant producer in the Indian coal industry, accounting for approximately 75% of total raw coal production during Fiscal 2025, with production of 781 MT. Other public sector producers contributed approximately 140 MT (13%), while Singareni Collieries Company Limited (SCCL) produced 69 MT (7%). The continued dominance of CIL reflects the significant contribution of its subsidiaries, particularly MCL, which accounted for approximately 225 MT of coal production during Fiscal 2025 and remained the largest coal-producing subsidiary within the CIL group.

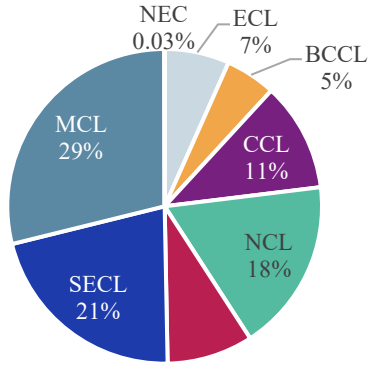
Crisil

Figure 2.20 Company wise raw coal production in FY 2025



Source: Ministry of Coal-Coal Directory of India for 2024-25

Figure 2.21 CIL subsidiary wise raw coal supply in FY 2025



Source: Ministry of Coal-Coal Directory of India for 2024-25

Table 2.10 Grade wise raw coal production of non-coking coal by different companies in Fiscal 2025

Grade	ECL	BCCL	CCL	NCL	WCL	SECL	MCL	SCCL	Other Public	Private	All India Total
G1	0.060	0	0	0	0	0	0	0	0	0	0.060
G2	0.110	0	0	0	0	0	0	0	0	0	0.110

Grade	ECL	BCCL	CCL	NCL	WCL	SECL	MCL	SCCL	Other Public	Private	All India Total
G3	3.200	0	0	0	0	0	0	0	0	0	3.200
G4	22.300	0	0	0	0	0	0	0	0	0	22.300
G5	11.300	0	0	0	0	0	0	0	0	0	11.300
G6	9.200	0	0	0	0	0	0	0	0	0	9.200
G7	5.848	0.540	16.480	0	0	0	0	9.870	21.500	0	54.238
G8	0	0.540	16.480	20.410	10.800	0	0	9.870	1.570	0	59.670
G9	0	0.534	16.480	30.620	16.200	0	0	9.870	6.420	0	80.124
G10	0	0	6.580	25.520	10.800	13.370	0	9.870	3.060	0	69.200
G11	0	0	10.978	62.450	31.321	89.100	50.000	9.870	10.200	4.000	267.919
G12	0	0	0	0	0	35.640	54.600	4.933	22.750	6.500	124.423
G13	0	0	0	0	0	22.280	54.600	4.933	30.590	10.500	122.903
G14	0	0	0	0	0	6.874	43.700	0	39.416	15.000	104.990
G15	0	0	0	0	0	0	16.400	0	4.120	8.500	29.020
G16	0	0	0	0	0	0	1.274	0	0	3.000	4.274
G17	0	0	0	0	0	0	0	0	0	3.532	3.532
Total	**52.018**	**1.614**	**66.998**	**139.000**	**69.121**	**167.264**	**225.174**	**69.066**	**139.626**	**51.032**	**981.053**

Source: Ministry of Coal-Coal Directory of India for 2024-25

Table 2.11 Average non-coking coal grade across CIL subsidiaries in fiscal 2025

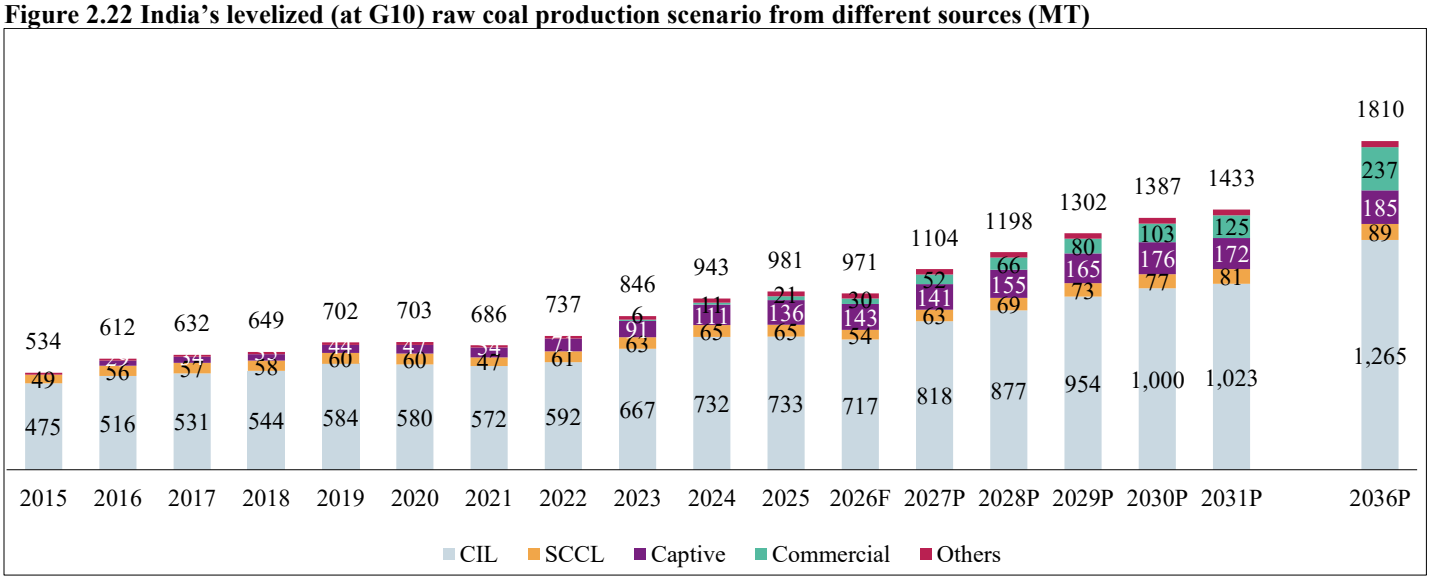
CIL Subsidiary	ECL	BCCL	CCL	NCL	WCL	SECL	MCL	NEC	CIL
Avg GCV (Kcal/Kg)	5271	5015	4296	4742	4233	4195	3613	6775	4219
Avg Non-coking Coal Grade	G7	G8	G11	G9	G11	G11	G13	G2	G11

Source: Coal Directory - Ministry of Coal 2024-25

MCL produces coal with an average grade of G13, which is widely used by India's thermal power sector and forms an important part of the country's domestic energy mix. The coal characteristics are well aligned with the requirements of power plants designed to operate on indigenous coal, supporting reliable and cost-effective electricity generation. As the largest coal-producing subsidiary of Coal India Limited, MCL benefits from a substantial reserve base, large-scale production capabilities and proximity to major power-consuming regions. The company's significant contribution to Coal India Limited's overall production strengthens domestic coal availability and plays a critical role in supporting India's growing electricity demand and energy security. At G10 grade levelized the total projected raw non- coking coal supply in fiscal 2031 comes out to be 1,433 MT.

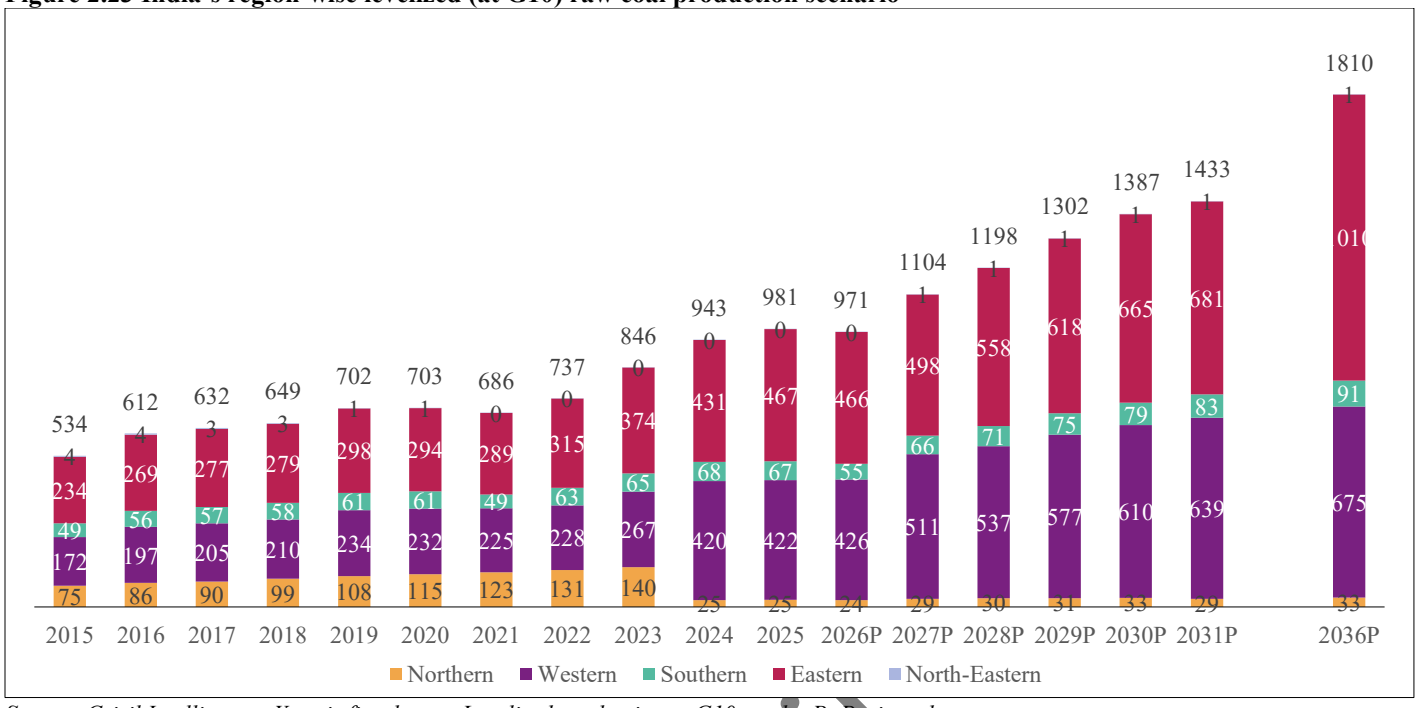
Crisil

Figure 2.22 India's levelized (at G10) raw coal production scenario from different sources (MT)



Source: Past data from Ministry of Coal-Coal Directory of India 2024-25, Projections by Crisil Intelligence; Year is fiscal year; Levelised production at G10 grade; P: Projected

Figure 2.23 India's region-wise levelized (at G10) raw coal production scenario

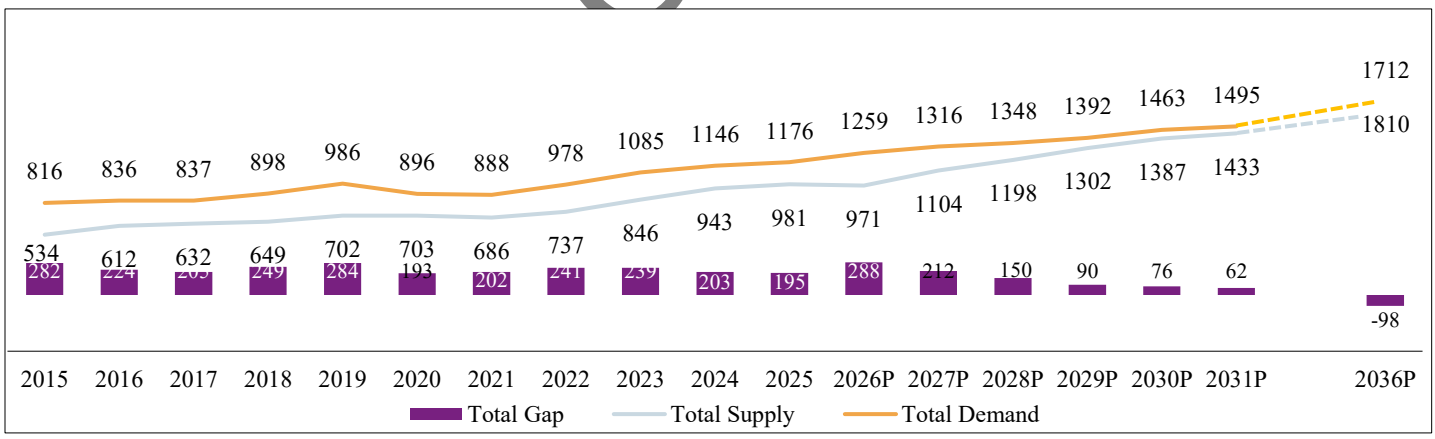


Source: Crisil Intelligence; Year is fiscal year; Levelised production at G10 grade; P: Projected

2.8 Analysis of coal demand-supply

The total coal demand has been consistently increasing over the years, with a few minor fluctuations, while the total supply of coal has also been increasing, but at a slower rate than demand, resulting in a persistent gap. This gap is expected to narrow down to 62 MT by fiscal 2031 from 195 MT in fiscal 2025. The coal supply is expected to surpass the demand by fiscal 2036.

Figure 2.24 India's demand-supply gap of coal (MT)

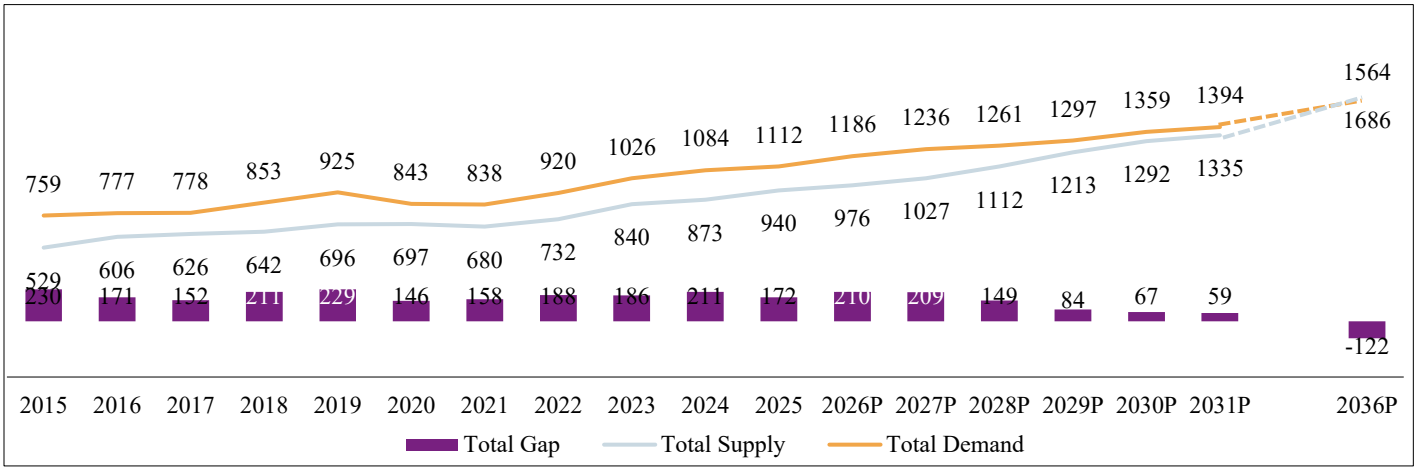


Source: Crisil Intelligence; Year is fiscal year; Coal supply levelised at G10 grade; P: Projected

Region wise demands show a high demand-supply gaps in the northern, southern and north-eastern regions as coal production is mainly concentrated in the eastern and western parts of India with major contributing states being Odisha, Chhattisgarh, Jharkhand and Madhya Pradesh. The total non-coking coal demand has been consistently increasing over the years, while the total supply of non-coking coal has also been increasing, but at a slower rate than demand, resulting in a persistent gap. with operationalization of auctioned mines contributing to the supply along with completion of ongoing expansion projects of existing mines (CIL/ non-CIL, this gap is expected to narrow down to 59 MT by fiscal 2031 and coal supply is expected to surpass the demand by fiscal

2036. After Fiscal 2036, demand for non-coking coal in India may decline due to the emergence of renewable energy as an alternative source of energy.

Figure 2.25 India's demand-supply gap of non-coking coal (MT)



Source: Crisil Intelligence; Year is fiscal year; Coal supply levelised at G10 grade; P: Projected

The coal demand supply situation is quite dynamic in nature with following factors affecting the surplus supply of coal in India by 2031.

Factors favouring deficit to continue beyond fiscal 2031[63]

- Surrender of High-Premium Commercial Blocks: Private developers surrendering unviable, high-premium blocks due to stable, lower-priced CIL linkage coal
- Reduction in Thermal-Grade Washery Byproducts: Advanced non- coking coal washeries maximizing clean coal yield, reducing the volume of middlings/rejects sent to power plants.
- Gestation Delays in Mega-Mining Projects: Prolonged land acquisition and evacuation infrastructure delays for greenfield blocks (>10 MTPA capacity)
- Depletion of Legacy Mines & Cost Rationalization: Geological exhaustion of key NCL and SCCL mines, paired with CIL closing high-stripping-ratio (SR) assets.

Factors favouring surplus before fiscal 2031[64]

- Technical Import Reliance of Coastal TPPs: Approximately 18,000 MW of coastal power capacity remains structurally dependent on high-GCV imported coal.
- Quality-Driven Imports by the Cement Sector: Cement kilns continuing to import high-calorific coal and pet coke to meet strict process requirements.
- Diversion of Raw Washery-Grade Coal: Delays in washery commissioning forcing the diversion of 60–80 MT of raw coking coal into the thermal pool.
- Fast-Tracking of Statutory Clearances: Government single-window clearance portals accelerating the operationalization of commercial blocks.

2.9 Historical coal import trends

Despite India achieving the historic milestone of surpassing ~1.048 billion tonnes of domestic coal production in Fiscal 2025, imports remain a vital structural component of the national energy supply chain. This import reliance is not driven by a lack of absolute volume, but rather by qualitative and geographical mismatches:

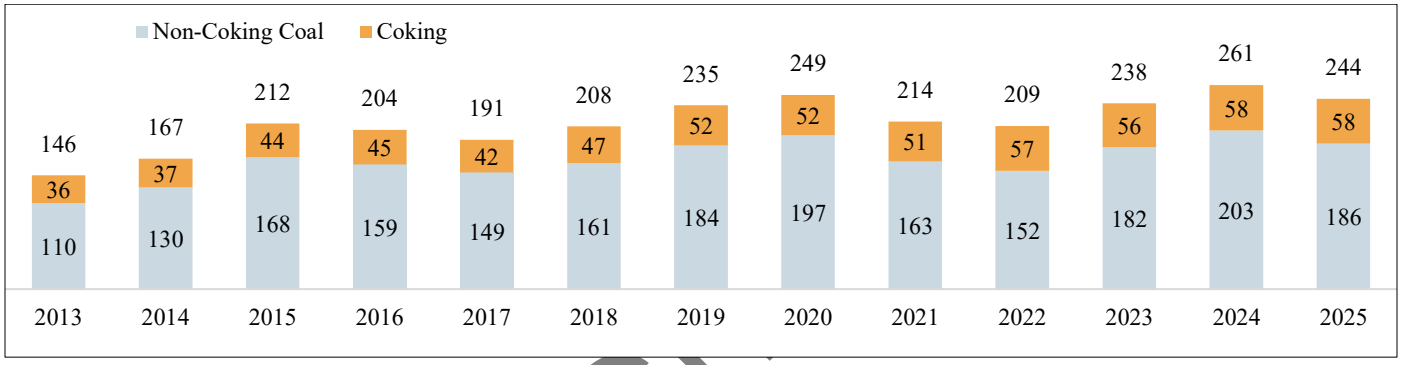
[63] *As per estimates only as market is dynamic*
[64] *As per estimates only as market is dynamic*

Crisil

- Geographical and Technical Constraints (Thermal Power): Approximately 18,000 MW of coastal thermal power plants are technically designed to run exclusively on high-calorific, low-ash imported non-coking coal. Retrofitting these boilers to burn domestic coal is highly capital-intensive, and transporting domestic coal from eastern pitheads to coastal western/southern utilities is often logistically unviable compared to seaborne imports.
- Qualitative Deficit (Metallurgical Coking Coal): India has extremely scarce domestic reserves of low-ash, high-fluidity coking coal necessary for the blast furnace route of steelmaking, requiring the steel industry to import the vast majority of its metallurgical coal.
- Process Requirements of the Non-Regulated Sector (NRS): Heavy industries such as cement, aluminium, and chemicals require high-calorific coal with specific sulphur and ash parameters to maintain kiln temperatures and process efficiency, which domestic non-coking coal (predominantly G11 to G17) cannot fully satisfy.

According to the Ministry of Coal and the Directorate General of Commercial Intelligence and Statistics (DGCIS), India's total coal imports stood at 243.622 Million Tonnes (MT) in Fiscal 2025, representing a 7.9% decline compared to the 264.531 MT imported in Fiscal 2024. This reduction resulted in foreign exchange savings of approximately US$7.93 billion (₹606.82 billion), driven by surging domestic production.[65]

Figure 2.26 Coal imports by India since fiscal 2015 (MT)



Source: Ministry of Coal-Coal Directory of India 2024-25, Ministry of Coal Annual Reports 2024-25, Year is fiscal year; P: Projected

Key Sectoral Trends in Coal Imports

- Government import substitution measures were highly successful, with coal imports for blending in domestic coal-based power plants falling 41.4% YoY to 18.08 MT, driven by increased domestic coal availability and the restoration of 100% ACQ linkage.
- Non-Regulated Sector (NRS) remains dependent on imported coal, with imports at 137.93 MT (56.6% of total imports), declining only 8.95%, as industries such as sponge iron, cement, and captive power continue to require high-GCV imported coal for operational efficiency.
- Coking coal imports showed limited decline (2.1% to 57.58 MT), highlighting the steel sector's continued structural dependence on imported metallurgical coal until domestic coking coal production and coal washing capacities expand significantly.

2.10 Coal Logistics Industry Overview

2.10.1 Overview of India's coal logistics industry

A robust and highly efficient logistics network is the backbone of India's economic growth trajectory. To sustain the country's transition toward a developed economy (Viksit Bharat) by 2047, the Government of India has consistently prioritized infrastructure-led growth. This has been driven by a massive expansion in public capital expenditure[66]:

- Public Capital Expenditure Outlay: In the Union Budget Fiscal 2026-27 (presented in February 2026), the central government locked in a record capital expenditure of ₹12.22 trillion (equivalent to ~3.4% of GDP).

[65] *Ministry of Coal, Government of India; Coal Controller's Organisation (CCO); DGCIS; PIB Press Releases (May 2025)*
[66] *Union Budget 2026–27: Logistics Infrastructure India Updates*

- Targeted Logistics Allocations: Reflecting the government's focus on multi-modal connectivity under the PM Gati Shakti National Master Plan, nearly half of the total capital budget has been directed toward transport and logistics ministries, receiving a combined ₹5.98 trillion:
    - Ministry of Road Transport and Highways (MoRTH): Allocated ₹3.10 trillion (up from ₹2.87 trillion in Fiscal 2026 BE and ₹2.78 trillion in Fiscal 2025).
    - Ministry of Railways: Allocated ₹2.93 trillion (up from ₹2.65 trillion in Fiscal 2026 BE and ₹2.56 trillion in Fiscal 2025).
- Logistics Sector Growth: Driven by these massive investments, India's logistics sector is projected to grow at an annual rate of 8.8% to reach ₹40.7 trillion by 2029, up from ₹26.7 trillion in 2024.[67]
- Global Performance Index: Due to these systemic infrastructure upgrades, India ranked 38th in the World Bank's Logistics Performance Index (LPI). The government has set a target to raise the country's ranking to 25th globally over the medium term.[68]

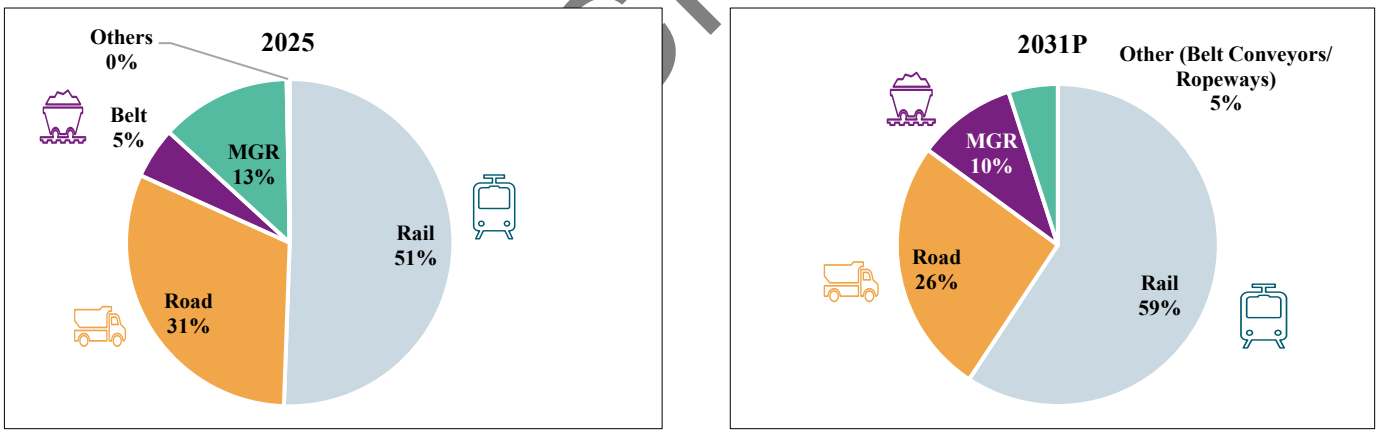
Table 2.12 Mode-wise split of freight movement in tonne-km (Fiscal 2025P)

Mode	% split freight movement
Railway	26%
Road	62%
Coastal	5%
Pipeline	7%

Source: Crisil Intelligence - Domestic freight transportation services - February 2025

Coal is used in multiple industries, including power, CPP, steel, cement, sponge iron, bricks and paper. The coal logistic chain involves extraction of coal from the mine, which is loaded onto railway wagons, trucks or conveyor belts at the dispatch points. The volume of coal dispatched in fiscal 2025 (1025 MT) by different modes was driven by rail (51%, 517 MT domestic coal), followed by road (31%, 319 MT), MGR (13%, 132 MT), Belt (5%, 52 MT), and others including belt conveyors/ropeways (5%, 5 MT) in fiscal 2025. Railways contributed 51% of total domestic coal supplied in the country in fiscal 2025, which is expected to increase to 59% by fiscal 2030, according to *Integrated Coal Logistics plan for Coal Mines/Blocks*.[69]

Figure 2.27 Coal handled by volume (MT) through various modes in fiscals 2025 and 2031E



Source: Crisil Intelligence; Ministry of Coal-Coal Directory of India 2024-25; P: Projected
Note: MGR (merry go round system)

Rail transported 54.5% of CIL's dispatch, followed by road transport contributing 30%. Odisha and Jharkhand are hugely dependent on rail. Madhya Pradesh is much dependent on rail, at 43%. Chhattisgarh and Maharashtra transport over 40% of coal by roads.

[67] *As per world bank report*
[68] *World Bank's Logistics Performance Index (LPI)*
[69] *Ministry of Coal, September 2023*

by S&P Global

2.10.2 Challenges faced by the mineral logistics industry

The efficiency of India's mineral logistics network is a critical determinant of national energy security and industrial competitiveness. Despite substantial public capital investments and policy reforms under the PM Gati Shakti framework, the evacuation and transport of bulk minerals- principally coal, continue to face structural, financial, and operational bottleneck.

1) **High transportation costs:** High logistics costs remain a significant challenge for India's coal sector, particularly for consumers located 1,500-2,000 km away from eastern coalfields, where transportation accounts for over 50% of the landed cost of coal. Rising rail freight rates, which increased from approximately ₹1.50/t-km in Fiscal 2020 to ₹2.10-2.20/t-km in Fiscal 2026[70], have further elevated delivered coal costs and, in some cases, made imported seaborne coal more competitive for power plants in coastal southern and western India. Although road transport is inherently more expensive than rail, it remains widely used for shorter distances due to various rail-related charges and operational constraints. To address these challenges, the government is promoting Rail-Sea-Rail multimodal corridors, Dedicated Freight Corridors (DFCs), and hub-and-spoke logistics networks to improve coal evacuation efficiency and reduce transportation costs.
2) **Infrastructure Bottlenecks and Limited Evacuation Capacity:** The rapid expansion of domestic coal production (crossing 1.047 billion tonnes in Fiscal 2025) has put immense pressure on legacy evacuation infrastructure, creating localized capacity constraints.
    - Siding and Haul Road Deficits: Many legacy mines and newly allocated private captive blocks lack dedicated, all-weather haul roads and direct railway sidings. This forces reliance on manual loading and truck-based transport to external railway sidings, which is slow, environmentally damaging, and financially unviable for large-scale operations.
    - Saturated Rail Corridors: Key coal-evacuation corridors frequently operate at 120% to 150% of their designed line capacity, leading to severe congestion and delays[71].
    - Strategic Solutions: To address these capacity constraints, the Ministry of Coal, in coordination with the Ministry of Railways, has fast-tracked 33 critical railway infrastructure projects to augment rail evacuation capacity[72]. Simultaneously, the rapid deployment of Gati Shakti Cargo Terminals (with over 142 operational terminals as of early 2026 and 310 more approved) is strengthening first- and last-mile connectivity[73].
    - First-Mile Connectivity (FMC) Transition: Coal India is executing a massive transition toward First-Mile Connectivity (FMC), with plans to commission 92 FMC projects of 994 MTPA capacity by the end of Fiscal 2029[74]. These projects replace road-based trucking with fully enclosed, mechanized conveyor belts and rapid-loading silos, eliminating dust emissions, reducing local road congestion, and dramatically expanding evacuation capacity.
3) **Elevated Wagon Turnaround Times:** Transportation transit times and terminal delays remain a major operational bottleneck, directly impacting the availability of rolling stock across the network
    - Wagon Turnaround Delays: Wagon turnaround time- the average time a railway wagon takes to complete a loaded trip, unload, and return to a mine for reloading- remains high. While the system-wide average for all freight is lower, coal wagon turnaround times average 3.9 days, frequently stretching to 4 to 5 days on congested corridors.[71]
    - Manual Loading and Demurrage: At poorly equipped sidings, the manual loading of oversized coal shipments extends dwell times at the source, resulting in high demurrage charges, slower train speeds, and artificial wagon shortages across the network. Slower turnaround times require a much larger active stock of wagons to move the same volume of freight, inflating overall logistics costs.

Strategic Solutions:

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[70] *PRS Legislative Research*
[71] *ASSOCAHM: Future ready railways for Viksit Bharat*
[72] *Answer lok sabha question: constraints in coal transportation and supply, 22.07.2026*
[73] *Ministry of Railway, Gati Shakti Cargo terminal commissioning*
[74] *CIL: FMC Project announcement, 05.06.2025*

- Automated Rapid Loading System- The installation of Rapid Loading Systems (RLS) and automated silos under FMC projects allows a full rake of wagons to be loaded in under an hour, significantly reducing dwell times and lowering turnaround times
- Lightweight Aluminium Wagons: Indian Railways is actively deploying next-generation, lightweight, and corrosion-resistant all-aluminium freight rakes (developed by Hindalco and BESCO). These specialized coal wagons are 180 tonnes lighter than traditional steel rakes, consume less energy, and can carry 5% to 10% more payload, while saving 14,500 tonnes of CO_2 emissions per rake over their 30-year operational lifetime.[75]
- Private Wagon Investment: Under schemes like the General-Purpose Wagon Investment Scheme (GPWIS), private industrial consumers are increasingly investing in their own dedicated high-capacity rakes (such as BOBRN rapid-discharge wagons) to secure transport reliability and bypass public wagon shortages.

2.11 Market drivers & opportunities and restrains & challenges

2.12.1 Major Drivers and Opportunities

1) **Sustained Economic Expansion and Urbanization**
India's rapid economic expansion remains the primary driver of energy demand. Real GDP grew at a 6-year CAGR of 5.61% between Fiscal 2020 and Fiscal 2026 (FAE), while nominal per capita Net National Income (NNI) crossed the ₹2,00,000 threshold to reach ₹205,324 in Fiscal 2025 and ₹219,575 in Fiscal 2026 (FAE). This rising prosperity, paired with an urbanization rate projected to reach 36.9% by Fiscal 2026, has triggered a massive expansion in industrial activity and electricity demand, solidifying India's position as the world's third-largest energy consumer.
2) **Headroom in Per Capita Electricity Consumption**
India's annual per capita electricity consumption rose from 1,010 kWh in Fiscal 2015 to 1,395 kWh in Fiscal 2024, representing a 10-year CAGR of 3.84%. Despite this growth, India's consumption is only ~36.7% of the global average (~3,800 kWh) and nearly one-tenth of the US average (~12,700 kWh). As household incomes rise and the penetration of energy-intensive appliances (such as air conditioning) deepens, per capita consumption is projected to reach 1,700–1,800 kWh by Fiscal 2032, driving a massive expansion in coal-fired baseload power generation.
3) **Growth in Core Manufacturing and Captive Power**
Beyond utility power, heavy industries like steel, aluminium, and cement are expanding rapidly under the government's PLI schemes and infrastructure push. Because these sectors require uninterrupted, high-capacity power, they rely heavily on self-generation. Steam-based captive power plants (CPPs) which overwhelmingly run on coal account for 81.77% of India's total industrial captive generation, with the aluminium and steel sectors relying on coal-fired steam power for 99.88% and 96.76% of their captive needs, respectively[76].
4) **Infrastructure Development and Sponge Iron Leadership**
Coal is a critical fuel and reactant for steel and cement manufacturing. Driven by the national infrastructure push, cement production is projected to reach 715 MTPA by Fiscal 2030 (up from ~595 MTPA in Fiscal 2024). Simultaneously, India has maintained its position as the world's largest producer of coal-based sponge iron (DRI), with output crossing 47 MT in Fiscal 2025 (up from 36 MT in Fiscal 2023), creating a highly profitable, non-regulated market for domestic non-coking coal
5) **Strategic Policy Opportunities: Commercial Mining and Gasification**
The government has introduced landmark structural reforms to boost domestic supply-
   - Commercial Coal Auctions: The conclusion of 14 rounds of commercial coal block auctions has successfully allocated 141 blocks, introducing private sector efficiency and capital.[77]
   - Coal Gasification Push: To promote clean coal technologies, the government approved a ₹85,000 million viability gap funding (VGF) scheme for coal gasification projects, opening up new opportunities in coal-to-chemicals (methanol, synthetic natural gas) and clean energy.[78]

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[75] *HINDALCO Launch news: All aluminium freight train, October,2022*
[76] *CEA- All India Electricity Statistics - General Review 2025 (All India Electricity Generation and Consumption by CPPs)*
[77] *Successful auction till July 2026*
[78] *https://www.pib.gov.in/PressReleasePage.aspx?PRID=2079746&reg=48&lang=2*

2.12.2 Key Restraints and Challenges

1) **Declining Share of Mining in GVA**
   Despite absolute GVA growth, the mining and quarrying sector's contribution to India's total real GVA declined from 2.6% in Fiscal 2019 to 1.82% in Fiscal 2026 (FAE). This relative decline reflects the faster expansion of the services and manufacturing sectors, which can create imbalances if domestic raw material supply lags behind industrial demand.
2) **Complex Approval Processes and Statutory Gestation**
   The operationalization of coal blocks in India remains subject to complex, multi-agency regulatory processes. Although the Ministry of Coal's Single Window Clearance System (SWCS) has streamlined approvals, projects continue to face prolonged gestation periods due to delays in obtaining forest clearances, environmental clearances, and mining leases from state-level authorities.
3) **Land Acquisition and Rehabilitation Bottlenecks**
   Land acquisition remains the most significant bottleneck for greenfield coal projects. Large-scale opencast mines require the acquisition of thousands of hectares of land, which frequently involve dense forest tracts, ecologically sensitive zones, and tribal (scheduled) areas. Navigating complex local compensation, resettlement, and rehabilitation (R&R) frameworks often leads to prolonged legal disputes and project delays.
4) **Evacuation and Transportation Logistics Bottlenecks**
   While coal demand is pan-India, domestic production is heavily concentrated in the eastern and central mineral belts (Odisha, Chhattisgarh, and Jharkhand account for ~65% of national dispatch). Consequently, coal must travel long distances to reach demand centers, putting immense pressure on the railway network. Key coal-evacuation lines frequently operate at 120% to 150% of capacity[79], leading to wagon shortages, line congestion, and elevated turnaround times.

2.12 Overview of key end use segments of coal

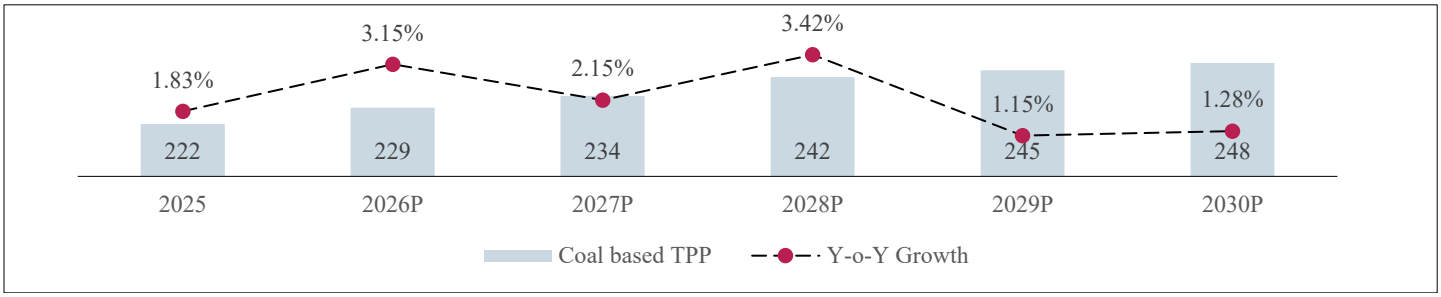
Power generation is the single-largest consumer of coal and is likely to be one of the major segments shaping the coal demand in future. In addition, industries such as steel and cement, which are key constituents of infrastructure development, are also highly dependent on coal.

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2.13.1 Power (utilities)

Growth in energy requirements has driven the Indian power (utilities) segment. As of March 2025, India has an installed capacity of 475 GW, comprising ~222 GW (47%) of thermal-based capacity, ~106 GW (22%) of solar capacity, ~48 GW (11%) of hydro-based generation capacity, and ~8 GW (2%) of nuclear power plants. In the past decade, India's installed capacity grew at 6.4% over fiscals 2020-2025, from ~370 GW in fiscal 2015 to ~475 GW in fiscal 2025.[80] Generation source wise capacity for coal, Hyrdro and renewables increased at 3.5%, 2%, and 21%, respectively. This growth is driven through private sector participation in power generation and focus on renewable energy capacity addition to reduce emissions intensity of India. The expansion has been primarily driven by coal-fired power generation capacity, and more recently, renewable generation.

Figure 2.28 India's installed coal-based power generation capacity projection (GW)



Source: Projections by Crisil Intelligence; Year is fiscal year; P: Projected

[79] *According to the Ministry of Railways' National Rail Plan, CAG Audit Reports*
[80] *CEA Estimates 2024-25*

The share of coal-based generation is higher in the generation mix due to its lower plant load factor (PLF) of renewable energy, gas and hydro-based generation. India's installed generation capacity and its planned expansion provide the frame within which company-level capital expenditure should be read. The National Electricity Plan contemplates total installed capacity of 874 GW by 2031-32, and the Government has assessed a thermal capacity requirement of approximately 307 GW by 2034-35 against an installed thermal base of approximately 245 GW.[81]

Coal-based generation accounted for approximately 49 per cent of installed capacity but approximately 65 per cent of electricity generated, reflecting the higher utilization of thermal plant relative to renewable capacity. The coal-based fleet therefore continues to carry the base load and the balancing burden of the system, and its fuel requirement is disproportionate to its share of installed capacity.

Announced multi-year capital expenditure programs : The generation majors each have announced capital expenditure programs extending over the next five to eleven years.

Table 2.13 Announced capital expenditure program by power sector

Company / group	Horizon	Announced capex (₹ billion)	Stated capacity objective
NTPC	To Fiscal 2037	16,700 – 17,000	Portfolio of 250 GW by Fiscal 2037; 35.7 GW under construction, of which 15.7 GW is coal based
Adani Power	To Fiscal 2032	2,000	Thermal capacity addition of 23,720 MW, taking capacity to 41,870 MW
NLC India	To Fiscal 2030	1,170	Thermal capacity of 10 GW and renewable capacity of 10 GW; mining capacity to be doubled
Tata Power	Fiscal 2024 to Fiscal 2027	842	Total capacity in excess of 30 GW by Fiscal 2030

Source: Company disclosures at annual investor meetings and annual general meetings, as reported in the press during Fiscal 2026 and the first quarter of Fiscal 2027.

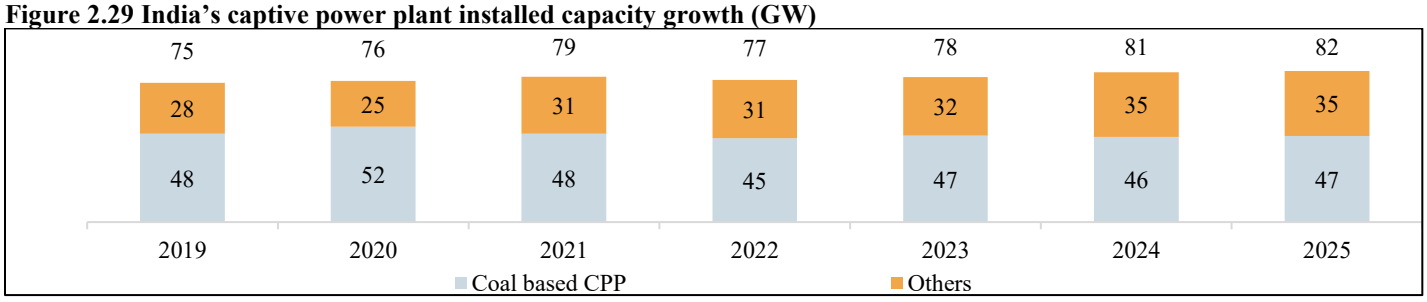
2.13.2 Power (captive)

Several industries, specifically energy-intensive industries such as aluminium, steel, sponge iron, cement, etc., which require a huge supply of electricity, tend to rely on their own generation (captive and cogeneration) rather than on grid supply, primarily for the reasons: 1) non-availability of adequate grid supply 2) Poor quality and reliability of grid supply 3) High tariff because of heavy cross-subsidization. The iron and steel industry's share in capacity is about 29% of the total captive capacity, the share of aluminium is 20% and the corresponding figures for cement, chemicals and sugar accounts for 12%, 6%, and 6%, respectively. Textiles, mineral oils, petroleum accounts for 4% and balance 19% is consumed by other smaller industries. However, in terms of generation, iron and steel and aluminium together constitute around 50% of the power generated by these captive units.

Source-wise, coal continues to be the key fuel source for the majority of CPPs, with a share of over 57% of the tracked capacity. This includes CPPs that use domestic coal, imported coal, and coal blended with washery rejects, pet coke and lignite. The abundance of fuel and the competitive capital cost of setting up large-scale coal-based CPPs are the two main reasons for their greater adoption. In fiscal 2025 the electricity generated by the coal based CPPs had an overwhelming share of 80% (1,86,900 GWh), while gas and diesel based CPPs had ~10% and 5% share respectively.[83]

Over the years, captive power plants (CPPs) have emerged as an effective alternative for commercial and industrial consumers to fulfil their energy requirements and hedge against the possible consequences of high grid power tariffs.

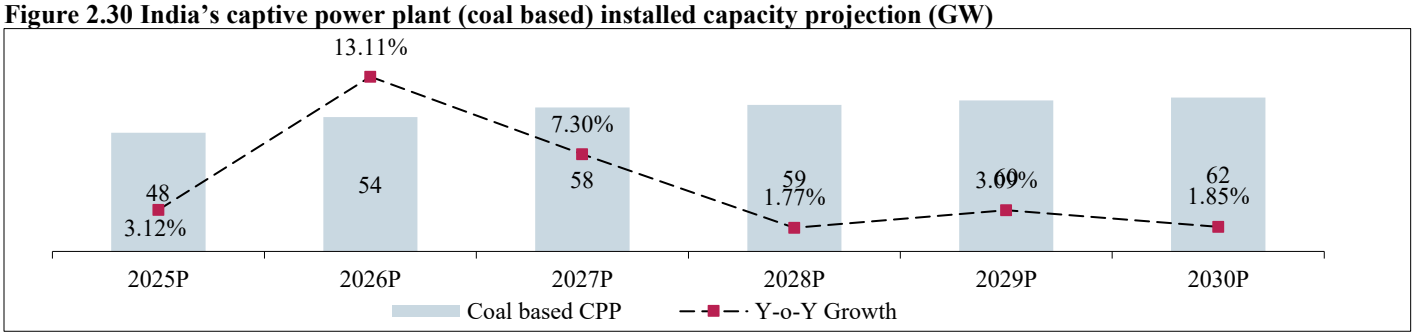
Figure 2.29 India's captive power plant installed capacity growth (GW)



[81] *CEA estimate, Ministry of power*

Source: Central Electricity Authority, Crisil Intelligence; Year is fiscal year; Others" includes Gas, Diesel, Hydro, and Renewable Energy Sources

Figure 2.30 India's captive power plant (coal based) installed capacity projection (GW)

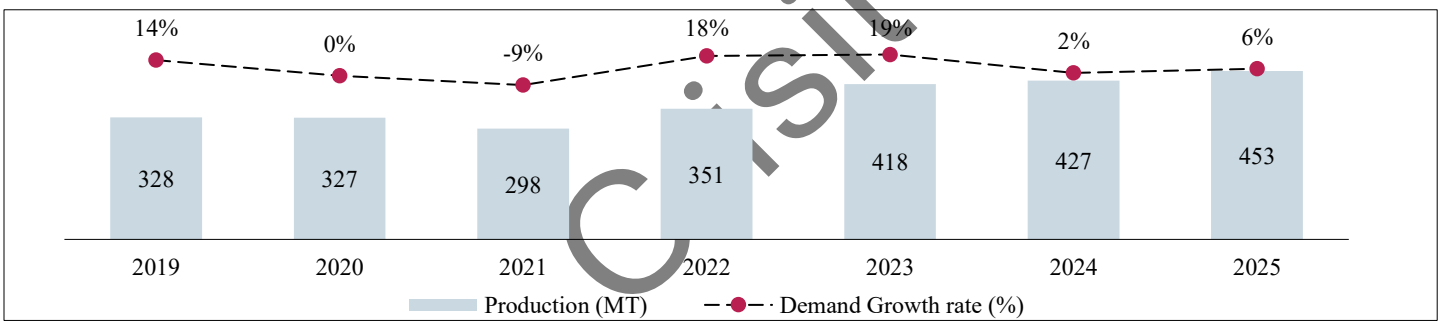


Source: Projections by Crisil Intelligence; Year is fiscal year; P: Projected

2.13.3 Cement

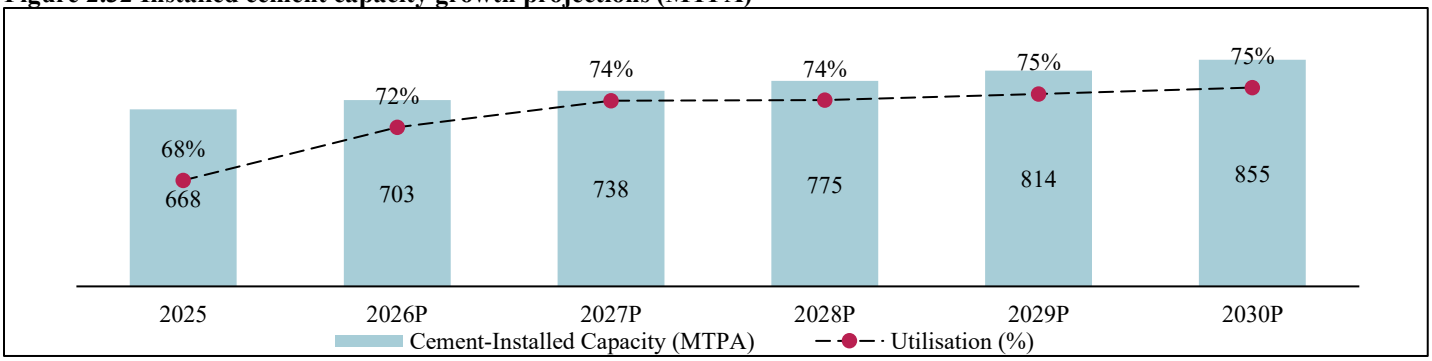
The Indian cement industry has recorded steady demand growth of around 6.5% CAGR over the past 15 years, supported by housing, infrastructure, and industrial development, although capacity additions have outpaced demand growth, leading to lower capacity utilization. As one of the largest consumers of non-coking coal, the sector relies heavily on coal for clinker production, making cement growth a key driver of coal demand. Cement manufacturing capacity remains concentrated in limestone-rich regions, with the southern region accounting for about 35% of installed capacity, followed by the western (27%), northern (25%), and eastern (10%) regions.

Figure 2.31 Cement production over the years (MT)



Source: IBEF; Crisil Intelligence; Year is fiscal year

Figure 2.32 Installed cement capacity growth projections (MTPA)



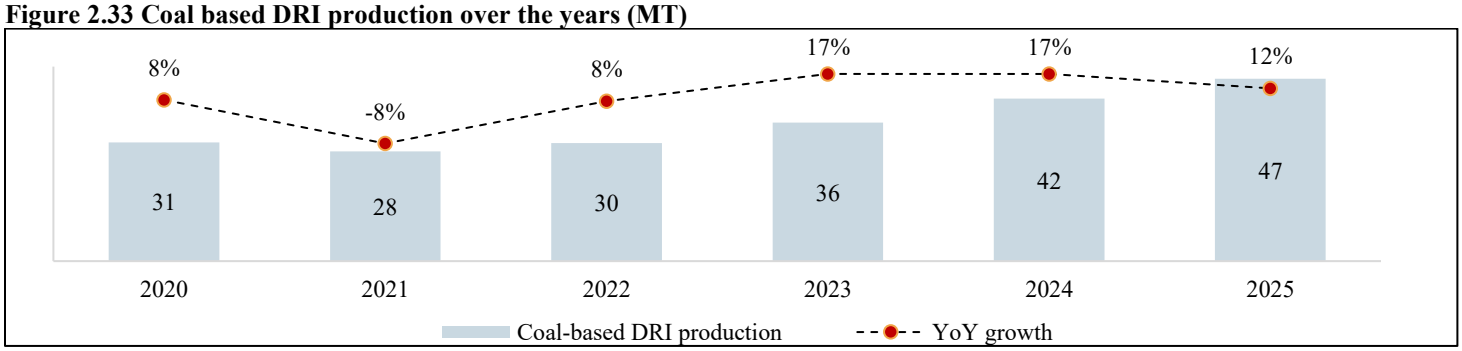
Source: IBEF; Crisil Intelligence; Year is fiscal year; P: Projected

2.13.4 DRI

Direct reduced iron (DRI) forms an important sub-sector of the Indian steel sector. DRI is used in production of steel via electric arc furnaces and induction furnaces with these two routes accounting for 53% of the total steel production. The total annual DRI capacity

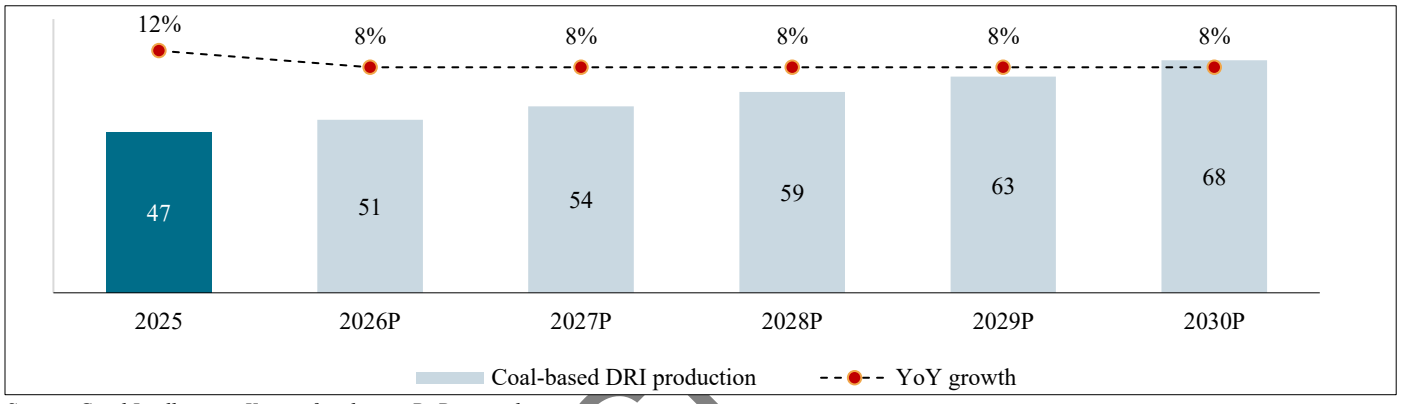
is 68.6 MT in fiscal 2025 including both coal based (56.3 MT) and gas based (12.3 MT) with a production of 56 MT (coal based- 47 MT and gas based- 9 MT). There are around 366 DRI plants in India, spread largely across 7-8 states.

Figure 2.33 Coal based DRI production over the years (MT)



Source: JPC Annual Statistics, SIMA (DRI Update), Crisil Intelligence; Year is fiscal year

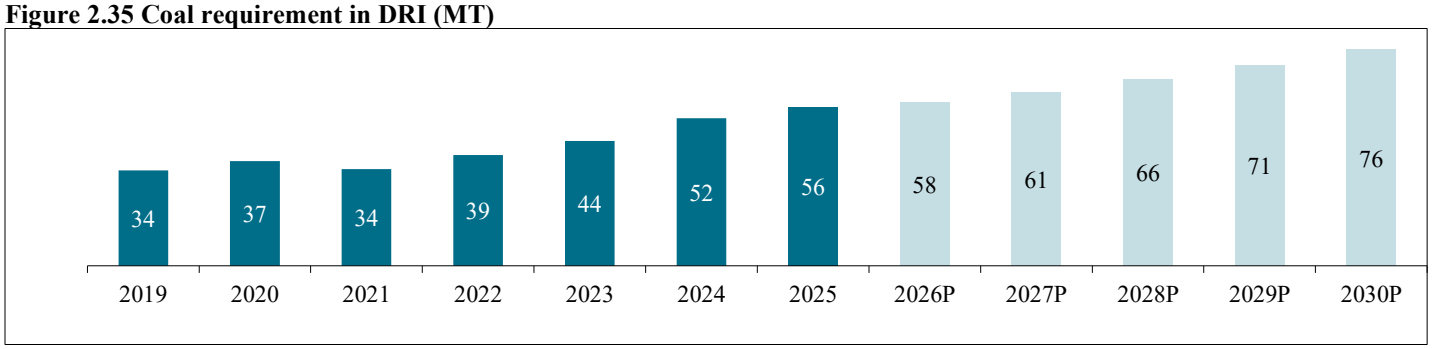
Figure 2.34 DRI production growth projections (MT)



Source: Crisil Intelligence; Year is fiscal year; P: Projected

Coal-based sponge iron plants are mostly present in the eastern and western regions, accounting for 60% and 40% of the total capacity, respectively, as these regions have easier accessibility to iron ore and non-coking coal.

Figure 2.35 Coal requirement in DRI (MT)



Source: Crisil Intelligence; Year is fiscal year

2.13Strategic Relevance and Longevity of Coal in India's Energy Mix

Extreme resource asymmetry in domestic fossil fuel endowments- The domestic energy balance of India is characterized by a structural disparity between solid fuel resources (coal and lignite) and liquid/gaseous hydrocarbons (crude oil and natural gas)-

Table 2.14 Resources to production ratio of energy commodities in India

Year	Coal	Lignite	Crude Oil	Natural Gas	All
2016	483	1,017	17	38	411
2017	479	988	17	40	410

Year	Coal	Lignite	Crude Oil	Natural Gas	All
2018	472	979	17	41	404
2019	448	1,033	18	42	391
2020	471	1,093	19	44	414
2021	492	1,214	19	48	435
2022	452	969	20	40	399
2023	423	1,076	23	33	382
2024	390	1,102	23	30	356
2025(P)	**383**	**1,050**	**23**	**30**	**356**

Source: Ministry of Statistics and Programme Implementation (MoSPI), Energy Statistics India. Note: 'All' encompasses Coal, Lignite, Crude Oil, and Natural Gas.; all years are fiscal years

India's energy resources are heavily skewed toward coal, with coal and lignite possessing exceptionally high R/P ratios (Resource to Production ratio) of 383 and 1,050 years, compared to much shorter reserves of crude oil and natural gas. As a result, coal remains the cornerstone of India's energy security, supplying the majority of primary energy needs and over 70% of electricity generation. Beyond power generation, coal is also critical for key industries such as steel, cement, and captive power. Despite rapid renewable energy expansion, coal is expected to remain the primary baseload and balancing fuel for decades, supporting energy security, affordable power, and economic growth.

2.14 Probable demand for domestic non-coking coal in view of government focus on import substitution

India's domestic coal production has increased significantly from about 556 MT in Fiscal 2013 to 997 MT in Fiscal 2024 and further to 1,047 MT in 2025[82], reflecting sustained government efforts to enhance indigenous coal availability and reduce import dependence. However, rising demand from the power and industrial sectors, limited availability of high-GCV coal, logistics constraints and regional supply-demand imbalances have continued to necessitate imports. Of the 244 MT of coal imported in Fiscal 2025, around 186 MT (over 75%) was non-coking coal, largely sourced from Indonesia, South Africa, Russia, the USA and Australia to meet requirements for higher-grade non-coking coal. Recognizing the substantial scope for import substitution, the Government is pursuing policies to expand domestic production through CIL, SCCL, captive and commercial mines, while strengthening coal evacuation infrastructure and mining efficiency.

In this context, coal washing and beneficiation play a critical role in improving the quality of domestic non-coking coal by reducing ash content, enhancing calorific value and improving combustion efficiency, thereby enabling substitution of imported non-coking coal in power, cement, sponge iron and captive power sectors. Given India's abundant non-coking coal reserves and the Government's continued focus on import substitution and coal quality improvement, even partial replacement of imported non-coking coal could create significant demand for washed domestic coal. According to NITI Aayog estimates, substituting just 25-30% of current non-coking coal imports could generate demand for over 45-55 MT per annum.[83] of washed coal, creating substantial opportunities for coal beneficiation facilities and producers such as Mahanadi Coalfields Limited (MCL).

With the Government's continued focus on import substitution, enhancement of domestic coal production, development of coal logistics infrastructure and improvement in coal quality, demand for domestic washed non-coking coal is expected to witness sustained growth. This is likely to create substantial opportunities for coal beneficiation facilities and coal producers such as Mahanadi Coalfields Limited (MCL) to cater to the evolving requirements of the power and industrial sectors.

Coal Import Substitution Measures

The Government has introduced several initiatives to promote import substitution of non-coking coal. The key focus areas include ensuring adequate domestic coal availability, improving coal quality and strengthening the coal supply chain.

a) Enhancement of coal production from CIL, SCCL, NLCIL, captive mines and commercial coal blocks.
b) Auction and operationalization of additional commercial and captive coal blocks.
c) Formulation of Coal Logistics Policy and development of dedicated coal evacuation infrastructure.
d) Enhancement of domestic coal supply to power and non-regulated sectors for replacing imported non-coking coal.
e) Adoption of advanced mining technologies and expansion of underground mining.

[82] *Coal Directory 2024-25*
[83] *NITI Aayog report*

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f) Promotion of coal beneficiation and supply of washed coal to improve coal quality and facilitate non-coking coal import substitution.

2.15 Capacity enhancement and production of washed coal by setting up washeries

Coal washing and beneficiation play a critical role in improving the quality of domestic non-coking coal by reducing ash content, increasing calorific value and enhancing combustion efficiency. Washed non-coking coal is primarily consumed by thermal power plants, sponge iron units, cement plants, captive power plants and other industrial consumers, where improved fuel quality results in higher operational efficiency and reduced environmental impact.

As per Coal Controller Organization records, India has an extensive network of non-coking coal washeries distributed across major coal-producing states such as Odisha, Chhattisgarh, Jharkhand, Maharashtra and Telangana. These washeries are operated by public sector companies, private sector entities and captive mine operators. Major public sector washeries include Lakhanpur IB Valley Coal Washery of Mahanadi Coalfields Limited (MCL) with a capacity of 10.0 MTPA, Piparwar Washery of Central Coalfields Limited (CCL) with a capacity of 6.5 MTPA, Bina Deshaling Plant of Northern Coalfields Limited (NCL) with a capacity of 4.5 MTPA and Manuguru Washery of SCCL with a capacity of 0.96 MTPA.

The non-coking coal washery sector is largely driven by private-sector participation, particularly in Odisha and Chhattisgarh, where large-scale beneficiation facilities have been developed close to major coalfields and consuming industries. Based on the identified non-coking coal washeries, private operators account for 48 washeries with an aggregate installed capacity of about 148.3 MTPA, representing approximately 86% of the total installed non-coking coal washery capacity. In comparison, CIL-operated washeries account for 2 washeries with a combined capacity of 16.5 MTPA, while other public sector entities operate two washeries with a total capacity of 23 MTPA.[84]

Some of the largest non-coking coal washeries operating in the country include Parsa East & Kanta Basan Coal Washery (15.0 MTPA), ACB India Dipka Washery (14.0 MTPA), ACB India Talcher Washery (11.0 MTPA), ACB India Ratija Washery (11.0 MTPA), Lakhanpur IB Valley Coal Washery (10.0 MTPA), Piparwar Washery (6.5 MTPA) and Jindal Steel & Power Limited's Angul Washery (6.0 MTPA). These facilities constitute a significant portion of the country's non-coking coal beneficiation capacity.[85]

The concentration of washeries in Odisha and Chhattisgarh reflects the importance of these states in India's coal sector. Odisha, which produced 269.36 MT of coal during Fiscal 2025 and accounted for the largest share of India's coal production, has emerged as a major hub for coal beneficiation activities. MCL's Lakhanpur IB Valley Coal Washery is one of the largest public sector non-coking coal washeries in the country and plays an important role in supplying quality coal to industrial consumers.

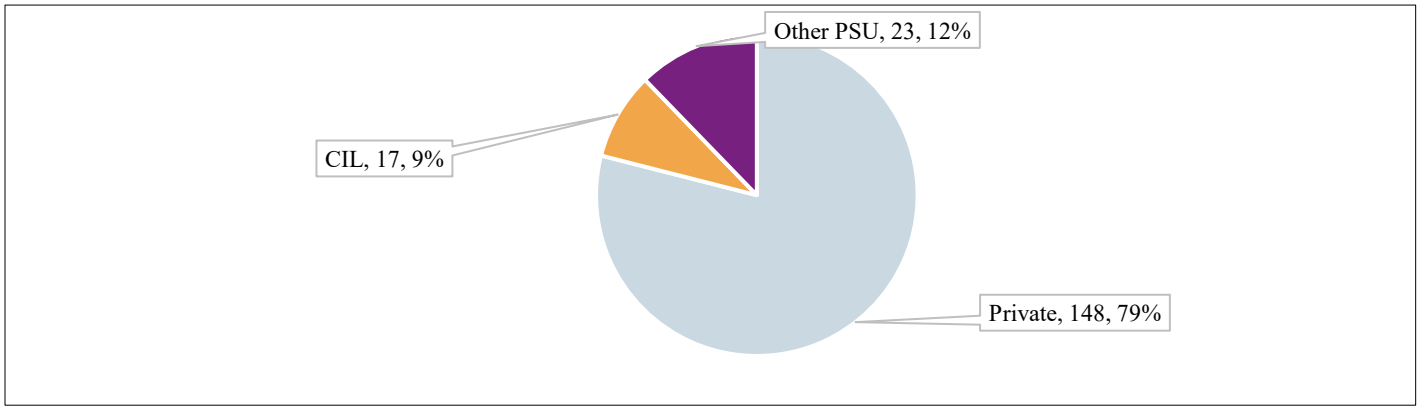
Growing emphasis on coal quality, environmental compliance and efficient utilization of domestic coal resources is expected to drive higher utilization of existing washeries. Beneficiation reduces ash content and improves the suitability of domestic coal for applications in power generation, cement manufacturing, sponge iron production and captive power generation. Consequently, washeries are expected to play an increasingly important role in enhancing value realization from indigenous coal resources.

The increase in domestic coal production from major producers such as MCL, SECL, NCL and other captive and commercial coal mines is expected to improve the availability of raw coal for beneficiation. As coal consumers increasingly seek higher-quality fuel for operational efficiency and environmental compliance, demand for washed non-coking coal is expected to grow steadily. This is likely to result in improved utilization of existing washeries as well as development of additional beneficiation facilities in major coal-producing regions.

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[84] *Coal Controller Organisation- List of Washeries as on 31.03.2025*
[85] *Ministry Of Coal*

Figure 2.36 Installed Capacity of Non-Coking Coal Washeries (MT)



Source: Ministry Of Coal

Accordingly, the continued expansion of coal production, increasing focus on coal quality improvement and growing demand from power and industrial consumers are expected to support sustained growth in coal beneficiation activities. Capacity enhancement of non-coking coal washeries is therefore expected to remain an important component of the domestic coal value chain, improving the quality, marketability and utilization of indigenous coal resources.

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3. Profiling of MCL

3.1 Business profile of MCL

Mahanadi Coalfields Limited (MCL) is one of India's largest and most strategically important coal mining companies and a wholly owned subsidiary of Coal India Limited (CIL), the world's largest coal-producing company. MCL was incorporated on 03 April 1992 following the bifurcation of South Eastern Coalfields Limited (SECL) and is headquartered at Sambalpur, Odisha. MCL was awarded the Miniratna (Category-I CPSEs) status on 03 Dec 2019[86].

Since its inception, MCL has evolved into the largest coal-producing subsidiary of Coal India and a critical contributor to India's energy security. The company operates primarily in the resource-rich Talcher and Ib Valley Coalfields (also known as Ib River Coalfields) of Odisha and supplies non-coking coal to power utilities, steel manufacturers, cement industries, sponge iron producers and other industrial consumers across the country. Being a subsidiary of CIL, MCL leverages the technical expertise in coal mining, resource management and environmental sustainability that CIL has cultivated over the years.

The company's growth story is closely linked to the development of the Talcher and IB Valley coalfields, India's first and third largest coalfield in terms of coal resources. Odisha possesses 106.76 Bt of coal resources, representing nearly one-fourth of India's total coal reserves.[87] The Talcher Coalfield is the larger of the two, holding 57.97 Bt of total resources. Crucially, it contains 36.96 Bt of "Proved/Measured" (highest confidence) reserves, making it one of the most secure and viable long-term mining assets in the country. The IB Valley Coalfield holds 48.79 Bt of resources (out of which 26.97 Bt is in "Proved/ Measured" category), characterized by thick seams ideal for high-volume extraction.[88] In terms of geological resources, MCL is one of largest holder of domestic coal resources **(40.34 Bt net geological resources)** and commands a dominant position, **accounting for 37.80% of Odisha's total resources** (Talcher and Ib Valley Coalfields combined) **and 9.80% of India's overall resource base**. In the Talcher and Ib valley coalfield, ~62% of resources (35.83 Bt) and ~49% of resources (21.91 Bt) respectively lie within the highly accessible 0-300 meter depth range.[89] **This favorable geology allows MCL to conduct highly mechanized, low-stripping-ratio opencast mining.**

The vast reserve base available in these coalfields provides MCL with a strong resource foundation and significant long-term production visibility. With some of the country's most prolific non-coking coal deposits under its command, MCL enjoys a distinct strategic advantage compared to other coal producers. With such substantial reserves, MCL is positioned to ensure steady supply of non-coking coal to different customers across industries including power, steel, cement, chemical, fertilizer etc. that rely on coal as primary fuel.

The company currently operates through two major coalfields comprising 14 mining areas with 14 opencast mines and 3 underground mines. These mining complexes collectively support MCL's position as the largest coal producer in the Coal India portfolio. MCL accounted for 21.0% of the India's overall domestic coal production and 28.4% of CIL's total coal production in Fiscal 2026.[90] Entire production of MCL was for non-coking coal and accounted for 22.4% of the India's overall non-coking coal production and 30.8% of the CIL's non-coking coal production in Fiscal 2026.[91]

Presently, MCL is growing under the leadership of Shri Uday A. Kaole (Chairman-Cum-Managing Director (CMD), MCL), Functional Directors- Shri Biranchi Das (Director- Personnel), MD. Anzar Alam (Director- Finance), Shri Sanjay Kumar Jha (Director- T/ P&P and OP) and part-time official directors- Shri Sanjeev Kumar Kassi (Add. Secy, MoC, GoI- Govt. Nominee Director), Shri Mukesh Choudhary (Director Marketing-CIL Nominee Director).[92] The determination and the unparalleled experience of the directors have enabled a continued growth trajectory of the company evident in the rapid growth of the company's financial numbers.

The company has a robust fleet of Heavy Earth Moving Machinery (HEMM) of 563 vehicles comprising of surface miners, shovel, dumper, dozer, and drills. MCL is the trend-setter in introducing Blast-free technology for winning coal in opencast

[86] *Information as per company website- Formation of MCL*
[87] *GSI- Indian Coal and Lignite Resoruces-2026, resources position as on 01.04.2026*
[88] *GSI- Indian Coal and Lignite Resoruces-2026, resources position as on 01.04.2026*
[89] *GSI- Indian Coal and Lignite Resoruces-2026, resources position as on 01.04.2026*
[90] *Coal Directory of India 2024-25, Ministry of Coal, Government of India- Monthly coal statistics- Mar 26*
[91] *Coal Directory of India 2024-25, Ministry of Coal, Government of India- Monthly coal statistics- Mar 26*
[92] *Information as per company website- board of directors*

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by S&P Global

mine by Surface Miner Technology. MCL employed manpower of 20,602 individuals ensuring smooth operations and efficient delivery.[93]

The company is aligned to emerge as a global company in the primary energy sector with a commitment to provide energy security to the country while achieving environmentally and socially sustainable development through best practices from mine to market. MCL has four main joint ventures and subsidiary companies[94] as given below:

- **Mahanadi Basin Power Limited (MBPL):** Incorporated on 2nd Dec 2011, a wholly owned subsidiary/special purpose vehicle (SPV) formed by MCL to set up large thermal power plant projects, such as the 2x800 MW power plant Pit Head Power plant at Basundhara region.
- **Mahanadi Coal Railway Limited (64% shareholding):** Incorporated on 31st Aug 2015 A joint venture railway company formed to improve coal evacuation and transport infrastructure for MCL's command areas.
- **MNH Shakti Limited (70% shareholding):** Incorporated on 16th July 2008, a joint venture company formed for coal mining and related power/infrastructure development.
- **MJSJ Coal Limited (60% shareholding):** Incorporated on 13th Aug 2008, a joint venture company incorporated for coal block development and allocation operations.

3.2 Key Milestone of the company

3.2.1 Unrivaled Volume Leadership and Market Dominance

MCL stands as the undisputed crown jewel and primary volume engine of Coal India Limited (CIL). **The company's scale of operations is unmatched in the domestic mining sector**:

- Historic Production Milestones: In Fiscal 2025, MCL scaled new heights by producing 225.17 MT of raw coal, representing a substantial growth over its previous record of 206.10 MT in Fiscal 2024. In Fiscal 2026 production eased slightly to 218.31 MT. Standalone, MCL contributes 28.4% of CIL's total output and 21.0% of India's entire domestic coal supply in Fiscal 2026.
- Existence of such significant reserves helps MCL to achieve economies of scale as the ability to extract coal in large volumes with reduced per unit- costs and improving cost- efficiency.
- Record-Breaking Off-take: MCL achieved its highest-ever coal off-take of 210.74 MT in Fiscal 2026, maintaining Fiscal 2025 offtake of 210.46 MT.
- Strategic Pure-Play non-coking coal Focus: MCL operates as a pure-play non-coking coal producer. By focusing exclusively on high-volume, shallow opencast deposits in Odisha (Talcher and IB Valley), MCL leverages a structural cost moat to supply the exact grades (G11 to G14) preferred by India's utility power plants, ensuring guaranteed long-term offtake.

3.2.2 Key Operational "Firsts" and Technology Enablement

MCL has consistently pioneered the adoption of advanced mining technologies and automated logistics systems, setting new benchmarks for the Indian mining industry:

- 99.4% Surface Miner Production: **In a historic environmental and operational first, MCL produced 99.4% of its total coal output using Surface Miners in Fiscal 2026.** This advanced, blast-free mining technology eliminates the need for drilling and blasting, significantly reducing noise, vibration, and dust pollution while producing pre-sized coal that bypasses expensive crushing stages.
- First-Mile Connectivity (FMC) Revolution: **MCL is leading CIL's transition toward mechanized, dust-free coal evacuation.** In Fiscal 2026, the company achieved a massive capacity addition, bringing its total operational FMC capacity to 96 MTPA.

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[93] *MCL annual report FY 2026, total manpower employed (Actual) as at 01.04.2026*
[94] *As per company website- about us: Subsidiary Company of MCL*

- World-Class Loading Efficiency: **In March 2026, MCL set a national record by loading its highest-ever monthly average of 46.4 rakes per day directly from its FMC terminals.** This significantly reduces wagon turnaround times and eliminates expensive railway demurrage charges.
- Pipe Conveyor Deployment: MCL has implemented an enclosed pipe conveyor system at its Lakhanpur Area in the Ib alley Coalfield as part of the Integrated Lakhanpur-Belpahar-Lilari (ILBL) Phase-I CHP SILO project (10 MTPA). The pipe conveyor facilitates the transportation of raw coal to the Ib Valley washery through an enclosed handling system, reducing dependence on road transport, minimizing dust emissions supporting environmentally sustainable coal evacuation.

3.2.3 Stellar Financial Performance and Capital Discipline[95]

MCL's operational superiority translates directly into industry-leading financial metrics, providing investors with an exceptionally strong cash-generation profile:

- Strong Revenue and Profitability: MCL delivered robust results in Fiscal 2026 with revenue from operations of ₹305.50 billion, total income of ₹338.99 billion, PBT of ₹143.61 billion, and PAT of ₹106.78 billion, achieving a healthy PAT margin of 32.0%.
- Robust Capital Expenditure (CAPEX): The Company incurred ₹29.30 billion in capital expenditure, focused on capacity expansion, mine infrastructure development, rail connectivity, and evacuation efficiency projects.
- Consistent Shareholder Returns: Demonstrating continued financial strength and cash-flow resilience, MCL paid an interim dividend of ₹64.00 billion and a final dividend of ₹12.50 billion, resulting in a total shareholder payout of ₹76.50 billion for Fiscal 2026.
- Significant Contribution to Public Finances: MCL remains a major contributor to government revenues through statutory levies and mining-related charges. During Fiscal 2026, the Company recognized expenses of approximately ₹29.36 billion towards Royalty, ₹8.78 billion towards District Mineral Foundation (DMF) and ₹0.75 billion towards NMEDT, apart from GST and other statutory dues associated with coal production and sales.

3.2.4 Resource Abundance and Strategic Geological Positioning

MCL's long-term valuation is backed by an extraordinary geological asset base that guarantees operational longevity:

- **MCL's extensive coal reserves offer them a strategic edge in an industry where resource availability is a limiting factor. MCL's coal mines are strategically located in the coal-rich Talcher and Ib Valley coalfields of Odisha, home to some of India's largest coal reserves, characterized by thick, continuous coal seams at shallow depth.**
- Leading coal producer in India: MCL operates primarily in Talcher Coalfield and Ib- Valley Coalfield. MCL's mining operations are spread across two coalfields, Talcher and Ib- Valley coalfield across 40 blocks inside these coalfields. The blocks cover an aggregate geological block area of 489 Sq.km.
- Collectively, MCL holds a total geological resource of 40.34 Bt, of which only 53.60% (21.63 Bt) has been projectized. The fact that 46.40% (18.71 Bt) of its geological resources are yet to be projectized highlights a significant, untapped asset base, offering immense potential for future capacity enhancement through capacity augmentation and development of new mines.

Table 3.1 Coalfields wise net geological and audited resources & reserves of MCL, as at 01.04.2026

Coalfields	*Area in Sq. Km.*	*Net geological resources (Bt)*	*Net geological resources projectized (Bt)*	*Total audited resource (Bt)*	*Total audited reserve (Bt)*
Talcher	247.02	18.79	13.57	5.86	5.43
Ib-valley	242.37	21.55	8.06	4.66	4.41
	Total	**40.34**	**21.63**	**10.52**	**9.84**

Source: DMT audited resources/reserves of MCL.

Table 3.2 Balance inventory resources of MCL, as at 01.04.2026

Particulars	*Resources (Bt)*
Net Geological Resources (A)	40.34
Total net geological Resources of inferred category considering the non projectised blocks and non projectised reserves (B)	3.41
Net Geological Resources (C= A-B)	**36.93**

[95] *MCL annual report FY 2026*

Depletion till 31.03.2026 (D)	3.53
Balance inventory as on 01.04.2026 (E=C-D)	**33.40**

Source: DMT audited resources/reserves of MCL.

- Based on the JORC Report as at 1 April 2026, MCL has a total coal inventory of 33.40 Bt. In the coming years, MCL is expected to undertake additional exploration and infill drilling programs to enhance the confidence level of the existing coal inventory and progressively convert these into resource higher-confidence categories and ultimately into Ore Reserves. Assuming a production rate similar to the current level is maintained, the additional resource-to-reserve conversion has the potential to extend the operational life of MCL by approximately 100 years. However, the actual mine life extension will depend on the success of future exploration programs, reserve conversion rates, mining and environmental approvals, and future production levels.
- Favorable Stripping Ratios: Because Odisha's coal seams are exceptionally thick, continuous, and shallow, MCL operates with highly favorable stripping ratios. **This allows the company to maintain the lowest production cost per tonne in CIL[96].**

3.2.5 Strategic Diversification and New Energy Ventures

MCL is actively transforming itself from a traditional coal miner into a diversified energy conglomerate, aligning its business model with India's long-term sustainability and net-zero targets:

- Solar Energy Transition: In Fiscal 2026, total installed solar capacity of MCL stands at 57.21 MW, while solar power generation was 69.932 MU in offsetting 57,344 tonnes of CO_2 emissions.[97]
- Coal-to-Chemicals (Value Addition): To capture higher-margin downstream value chains, MCL has taken concrete steps toward establishing a state-of-the-art Coal-to-Ammonium Nitrate Plant in the Lakhanpur Area, supporting the domestic fertilizer and explosive manufacturing sectors.
- Circular Economy (Fly-Ash Slurry Disposal): In a major environmental breakthrough, MCL pioneered the filling of de-coaled voids in its abandoned quarries (including South Balanda, Jagannath, and Bharatpur OCPs) with fly-ash transported via slurry pipelines, solving a major waste-management challenge for local thermal power plants.

Mahanadi Coalfields Limited (MCL) represents a highly compelling investment proposition that seamlessly bridges India's current energy demands with its long-term transition goals.

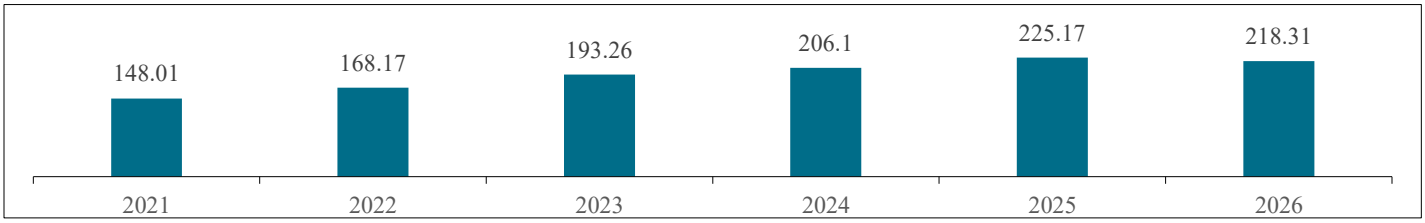
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3.3 Past performance review

3.3.1 Coal Production Trend

MCL has delivered strong and sustained operational growth over the last five years, driven by expansion of opencast mining operations, adoption of advanced mining technologies, and continuous strengthening of coal evacuation infrastructure. Coal production increased from 148.01 MT in Fiscal 2021 to a record 218.31 MT in Fiscal 2026, representing growth of approximately 47%. Production remains overwhelmingly opencast-led, with opencast mines contributing approximately 218.0 MT (over 99%) of total production in Fiscal 2026, while underground mining contributed only 0.31 MT. Underground production is undertaken entirely through departmental operations, whereas opencast mining is primarily executed through contractual and Mine Developer & Operator (MDO) arrangements.

Figure 3.1 Production of Coal (MT) for MCL



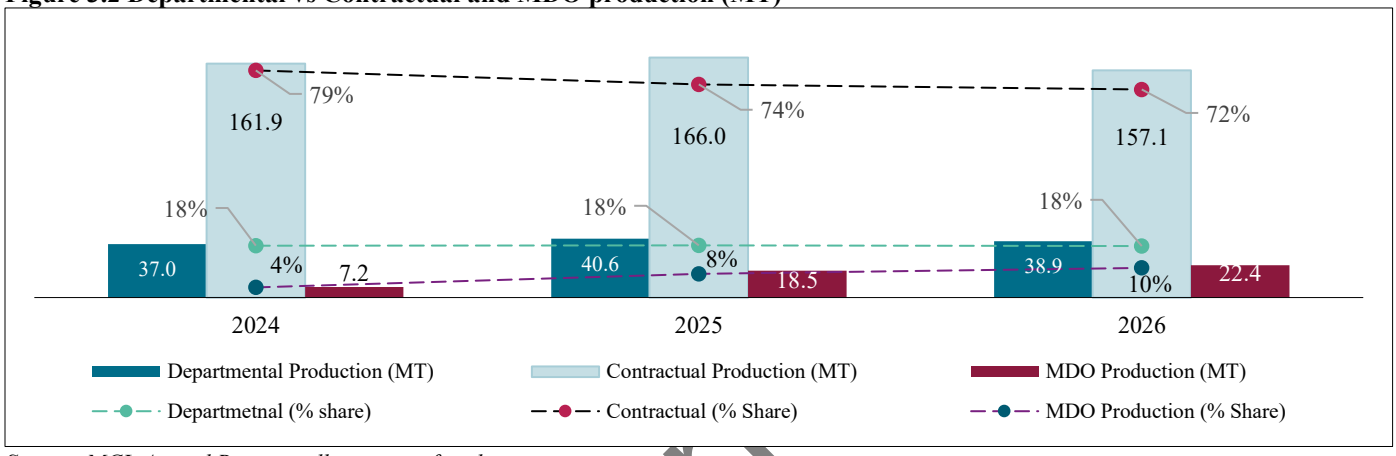
Source: Coal Directory of India, MCL annual reports; all years are fiscal years

[96] *Data as per annual reports of major CIL subsidiaries, further details provided in section 4.5.4 (cost of production)*
[97] *MCL annual report FY 2026*

MCL's production portfolio continues to be dominated by outsourced mining operations. In Fiscal 2026, contractual mining contributed 72% of total coal production, compared with 79% in Fiscal 2024, while departmental production remained stable at around 18%. Production through Mine Developer and Operator ("MDO") arrangements increased significantly from 7.2 MT (4%) in Fiscal 2024 to 22.4 MT (10%) in Fiscal 2026, reflecting the ramp-up of long-term mining contracts. A similar trend was observed in overburden (OB) removal, where contractual operators accounted for 88% of total OB removal during Fiscal 2026.

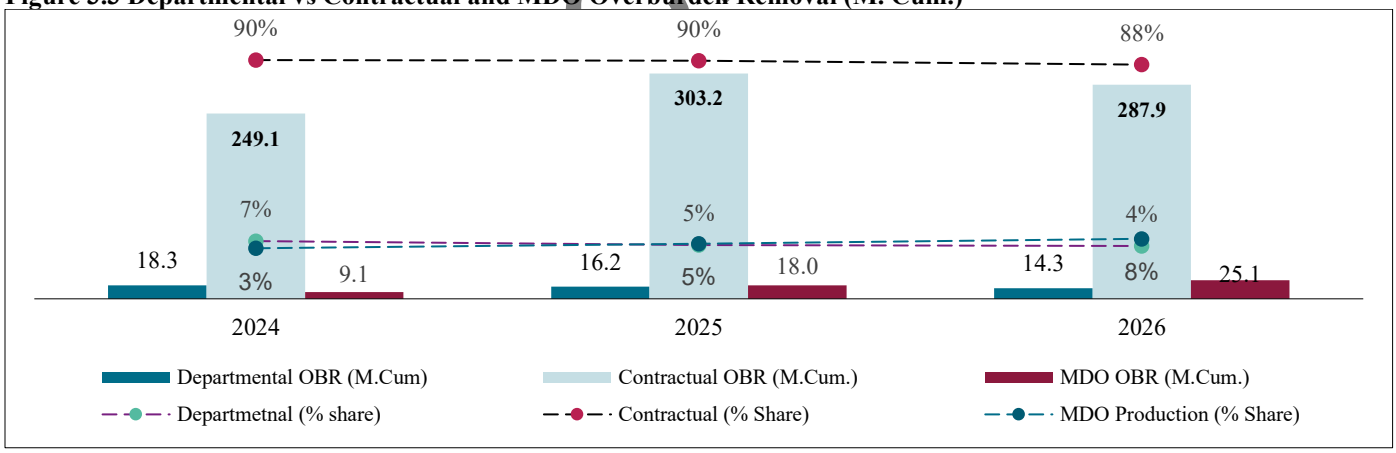
Production remained well diversified across MCL's two major mining regions. During Fiscal 2026, Talcher Coalfield contributed 53% of total production, while IB Valley Coalfield contributed 47%. Talcher continues to be the Company's flagship coalfield, supported by large opencast projects such as Jagannath, Bhubaneswari, Lingaraj and Kaniha, while IB Valley strengthened its contribution through high-capacity operations including Lakhanpur, Kulda, Garjanbahal and Siarmal. **The balanced contribution from both coalfields enhances operational flexibility, supports long-term resource sustainability, and reduces dependence on any single mining cluster thereby strengthening MCL's overall production resilience.**

Figure 3.2 Departmental vs Contractual and MDO production (MT)



Source: MCL Annual Reports, all years are fiscal years

Figure 3.3 Departmental vs Contractual and MDO Overburden Removal (M. Cum.)



Source: MCL Annual Reports, all years are fiscal years

MCL's production portfolio is largely concentrated in mid-grade non-coking coal, aligned with the requirements of the domestic power sector. During Fiscal 2026, G12, G13 and G14 grades together accounted for 202.88 MT, representing nearly 93% of total coal production. G12 remained the largest grade, contributing 82.45 MT (38%), followed by G14 at 65.54 MT (30%) and G13 at 54.89 MT (25%). Notably, G12 production increased to 82.45 MT from 73.12 MT, driven by changing mine exposure conditions and extraction from different coal seams. The limited contribution of superior grades (G1-G8) underscores that **MCL's competitive strength is primarily driven by scale, supply reliability and logistics efficiency, rather than premium-grade coal production.**

The increase in coal production was supported by significant mine development activities. Overburden removal nearly doubled from 173.15 Mm³ in Fiscal 2021 to 327.22 Mm³ in Fiscal 2026. The stripping ratio increased from 1.17 m³/tonne in Fiscal 2021 to 1.50 m³/tonne in Fiscal 2026, reflecting substantial investment in advance stripping and exposure of future coal reserves to support sustainable production growth.

Operational productivity also improved during the period. Overall Output per Manshift (OMS) increased from 27.15 tonnes in Fiscal 2021 to 30.34 tonnes in Fiscal 2026. Productivity gains were driven by large-scale mechanized mining, deployment of high-capacity equipment, and adoption of advanced mine planning practices.

Overall, MCL's record production, growing contribution from MDO operations, balanced coalfield portfolio, increasing overburden removal, and sustained productivity improvements demonstrate strong operational execution and effective balancing of current production requirements with long-term reserve development, supporting sustainable future growth.

Table 3.3 Coal Production and overburden (OB) Removal and Output Man Shift (OMS) of MCL

Particulars	2021	2022	2023	2024	2025	2026
Underground Production	0.53	0.45	0.45	0.46	0.48	0.31
Open Cast Production	147.48	167.72	192.81	205.64	224.70	218.00
Total Coal Production (MT)	148.01	168.17	193.26	206.10	225.17	218.31
Total OB Removal (Mm³)	173.15	206.17	245.98	276.50	337.39	327.22
Overall strip ratio (m³/tonne)	1.17	1.23	1.27	1.34	1.50	1.50
OMS (OC) in tonnes	32.30	39.41	41.20	33.85	34.99	35.95
OMS (UG) in tonnes	0.60	0.57	0.59	0.59	0.60	0.43
OMS (overall) in tonnes	27.15	32.76	35.65	27.05	29.56	30.34

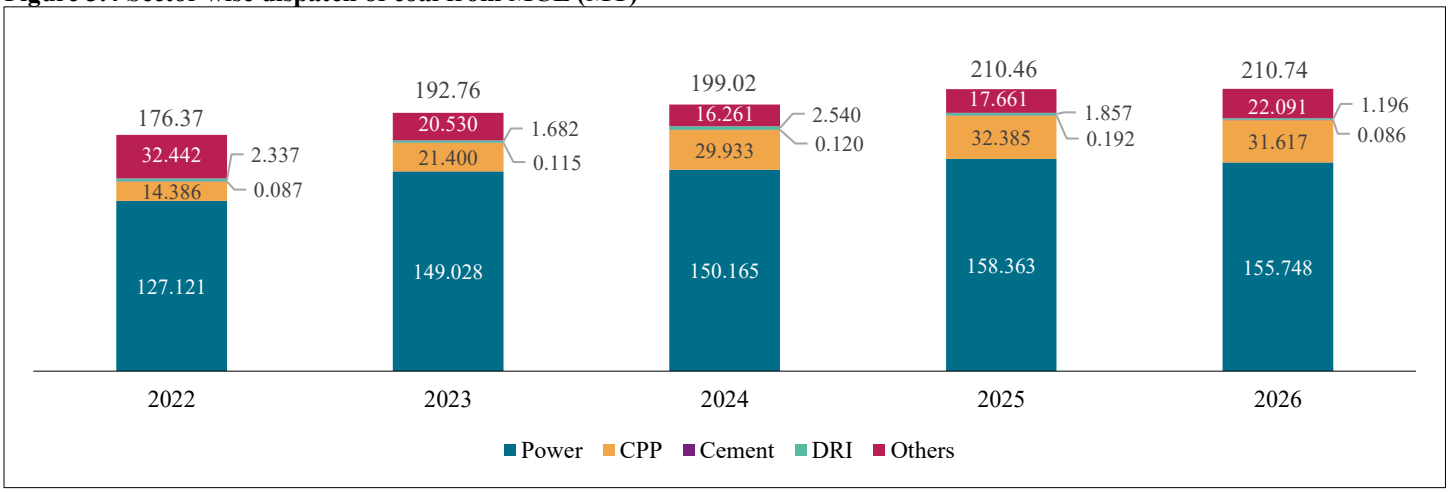
Source: Coal Directory of India; MCL Annual Reports

3.3.2 Coal Dispatch Trend

MCL has consistently strengthened its coal dispatch performance through investments in rail connectivity, first-mile connectivity projects, rapid loading systems and integrated logistics infrastructure. Coal dispatch increased from 146.01 MT in Fiscal 2021 to 210.74 MT in Fiscal 2026, registering cumulative growth of approximately 44.3%. The company achieved its highest-ever coal dispatch of 210.46 MT during Fiscal 2026 despite challenges relating to rake availability and weather-related disruptions. The power sector remained the dominant consumer segment, accounting for approximately three-fourths of total dispatches, highlighting MCL's strategic role in supporting India's energy security.

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Figure 3.4 Sector wise dispatch of coal from MCL (MT)



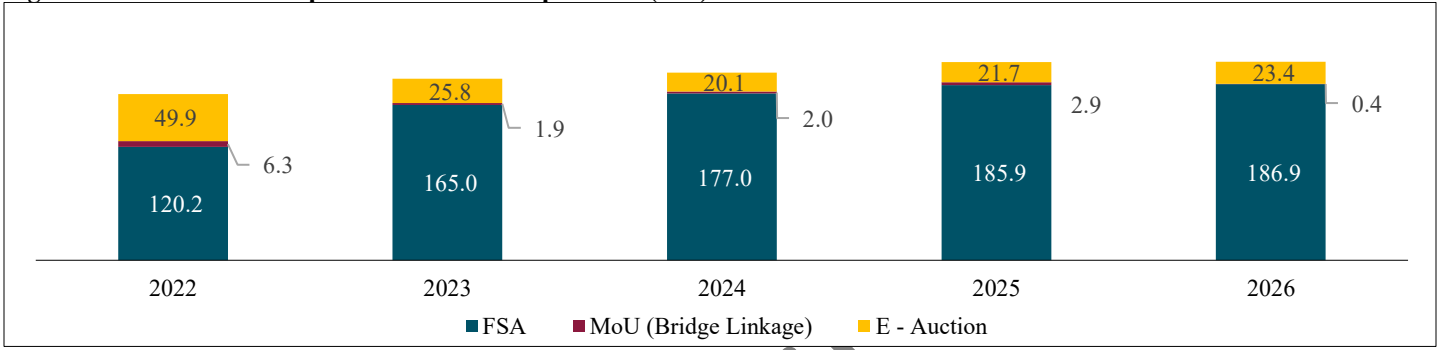
Source: MCL Annual Reports, all years are fiscal years

MCL's coal dispatch portfolio is characterized by a high proportion of supplies under long-term Fuel Supply Agreements ("FSAs"), which provide stability, demand visibility and cash flow predictability. FSA dispatches increased from 120.2 Mt in Fiscal

2022 to 186.9 Mt in Fiscal 2026, representing a CAGR of approximately 11.7%, and accounted for nearly 89% of total dispatches in Fiscal 2026. This growth reflects sustained demand from power generation companies and other long-term consumers, which continue to form the core of MCL's customer base. While long-term contractual sales remain the foundation of MCL's dispatch portfolio, the Company continues to maintain a meaningful presence in higher-realization market channels such as e-auctions.

MCL continues to benefit from its strategic location in Odisha, one of India's largest power-generation and industrial hubs. Coal dispatches within Odisha remained resilient at 78.6 Mt to 81.5 Mt during Fiscal 2025 to 2026, accounting for 37-39% of total dispatches, reflecting a stable domestic demand base from thermal power producers, and other industrial consumers. The Company's proximity to key demand centers enables lower logistics costs, supply reliability and reduced dependence on long-distance transportation, providing a natural advantage in servicing customers within the state while simultaneously supporting interstate dispatches.

Figure 3.5 Scheme wise dispatch of coal & coal products (MT)



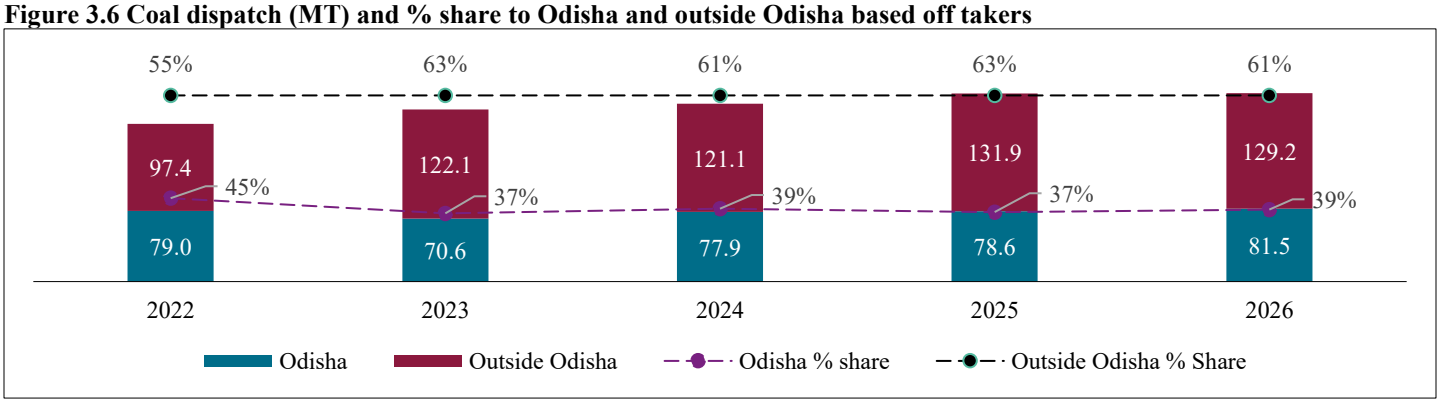
Source: MCL annual reports, all years are fiscal year

Table 3.4 Contracting Diversity Fuel Supply Agreements and E-auction

Dimension	2024	2025	2026	Movement (2025-2026)
Number of FSAs / MoUs signed during the year	520	191	241	50
Aggregate Annual Contracted Quantity (MT)	26.79	31.89	48.50	52.0%
Average ACQ per agreement (MT)	0.0515	0.167	0.201	20%
Quantity offered under e-auction (MT)	28.653	45.47	72.26	58.90%
Quantity booked under e-auction (MT)	22.859	22.06	26.49	20.11%
Booking ratio	79.8%	48.50%	36.70%	(11.80)%
Premium collected over notified price (₹ million)	18,334.4	8,933.6	7,283.1	(18.47)%
Premium per tonne booked (₹)	802.07	405.02	274.90	(32.13)%

Source: MCL Annual Reports; ACQ- Annual contracted quantity

Figure 3.6 Coal dispatch (MT) and % share to Odisha and outside Odisha based off takers



Source: MCL annual reports, all years are fiscal year

MCL has aggressively strengthened its evacuation infrastructure, driving its First Mile Connectivity (FMC) dispatch share from 6% in Fiscal 2024 to 23% in Fiscal 2026 (96 MTPA). Supported by six silos, rapid loading systems, and mechanized coal handling facilities, this rapid transition away from road transport significantly enhances dispatch efficiency and throughput. This automated, eco-friendly logistics framework represents a key operational strength, positioning MCL for seamless and sustainable capacity scaling. During Fiscal

2026, dispatch from railways, road and MGR contributed 65%, 31% and 4% respectively[98]. In addition to MCL's geographically diversified customer base, MCL maintains a strong presence in Odisha as close proximities to different industries allows for efficient, low cost coal evacuation and reliable long- term supply relationships.

Table 3.5 Mode wise dispatch of MCL (MT)

Dispatch	Mode	2024	2025	2026
FMC Dispatch	Railway	11.44	23.02	47.01
	MGR	1.09	1.33	1.14
	Road	0	0	0.38
	Total	**12.54**	**24.35**	**48.54**
Others	Railway	105.38	111.42	90.55
	MGR	9.44	7.51	7.26
	Road	71.67	67.18	64.4
	Total	**186.48**	**186.11**	**162.2**
Total	Railway	116.82	134.44	137.56
	MGR	10.53	8.84	8.4
	Road	71.67	67.18	64.78
	Total	**199.02**	**210.46**	**210.74**

Source: MCL records of mode wise dispatch of coal; MCL annual reports; all years are fiscal year

Certain customers utilize MCL's sea-borne shipment capabilities because ocean freight can offer lower transportation costs than overland routes, while also providing supply continuity during periods of inland logistics congestion.

MCL's robust evacuation of over 45 MT in Fiscal 2025 and 2026 across eastern ports, anchored by Paradip and expanding into Vizag and Gopalpur significantly strengthens its Rail-Sea-Rail (RSR) logistics framework. By leveraging this multimodal maritime network, MCL successfully reduces cargo turnaround times and bypasses congested all-rail and road corridors. This highly efficient, port-linked evacuation capability represents a core operational strength, ensuring scalable and uninterrupted coal dispatch to coastal power utilities.

Table 3.6 Port wise coal dispatch (MT) and % share in total dispatch

Ports	2024	2025	2026
Paradip	37.0	38.4	38.9
Dhamra	2.2	3.6	2.4
Vizag	-	-	1.5
Gangavaram	4.2	3.5	2.1
Gopalpur	-	-	0.4
Total	**43.4**	**45.5**	**45.3**
% share of Total Dispatch	**21.8%**	**21.6%**	**21.5%**

Source: MCL records of mode wise dispatch of coal; MCL annual reports; all years are fiscal year

Infrastructure Upgrades: To improve its coal evacuation, MCL commissioned major rail and loading infrastructure projects during Fiscal 2026, which includes-

- Bhubaneswari Phase-II SILO of 15 MTY Capacity (with integrated Automatic Truck Loading System of 3.0 MTPY Capacity)
- Sardega CHP / Rapid Loading System (RLS) (20 MTY capacity)
- Bhubaneswari CHP-SILO Phase-I (10 MTY capacity)
- Input Coal feeding arrangement to Bhubaneswari SILO (Ph-I)

In Fiscal 2026, 65% of MCL's coal dispatches were transported by rail, reflecting increasing reliance on railways, which reduces dependence on road transportation, lowers customer logistics costs, and enhances the reliability and speed of coal evacuation. For the remaining 31% road-based dispatch, MCL deployed extensive dust mitigation equipment in Fiscal 2026, including 197 mobile water sprinkler tankers, 3 truck mounted mist sprinklers. The water required for various activities including mine operations, washery operations, dust suppression at feed/discharge points, haul roads and coal handling plants is obtained from water accumulated in opencast queries and water accumulates during underground mining.

3.3.3 Fleet size

[98] *MCL annual report FY 2026*

Mahanadi Coalfields Limited (MCL) possesses one of the largest and highly mechanized Heavy Earth Moving Machinery (HEMM) fleet that supports its predominantly opencast mining operations across the Talcher and Ib Valley coalfields. The company's equipment base comprises dumpers, dozers, shovels, drills and surface miners, which collectively facilitate large-scale coal production and overburden removal activities.

As of Fiscal 2026, MCL operated a fleet of approximately 563 major equipment units, comprising 286 dumpers, 129 dozers, 69 shovels, 57 drills and 22 surface miners. Dumpers constituted the largest component of the fleet and accounted for more than half of the total equipment base, highlighting the importance of haulage operations in the company's mining activities. One feature is utilization of surface miners for blast free open cast mining operations. MCL deployed approximately 70 surface miners in its operations, comprising both owned and contracted surface miners. In Fiscal 2026 MCL deployed 22 (own) surface miners. MCL's surface miner fleet is the largest number among Coal India Limited's subsidiaries (Coal India Limited's total fleet of 47 surface miners).

The fleet is deployed across multiple opencast projects and supports coal extraction, overburden removal, mine development and coal transportation activities. However, the utilization of the equipment are on the lower as major fleets of HEMM's come from outsourcing contracts and this is the strength, boosting Production of MCL.

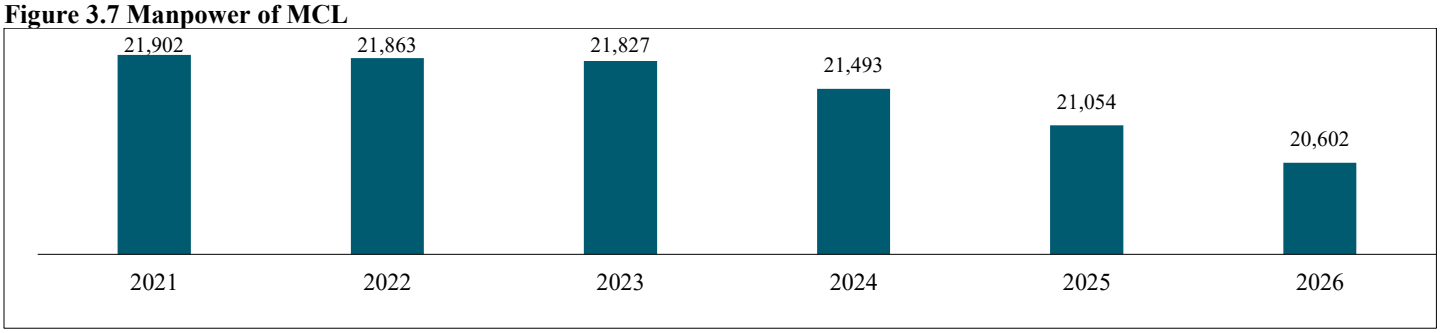
3.3.4 Manpower

The company maintains a skilled workforce across mining, technical, supervisory and administrative functions, enabling efficient execution of production, overburden removal, coal beneficiation and logistics activities. Despite a gradual decline in employee strength over the years due to superannuation and increasing mechanization, MCL has consistently improved operational performance and productivity. As at 1 April 2026, MCL employed 20,602 personnel, compared with 22,065 employees as at 1 April 2015, representing a decline of approximately 6.6% over the period. **During the same period, coal production increased significantly, highlighting the positive impact of mechanization, deployment of high-capacity mining equipment and process optimization initiatives, thereby promoting operational efficiency in the system. MCL's Output per manshift (OMS) of 30.3 tonnes is around 2.4x the CIL's consolidated average of 12.7 tonnes in Fiscal 2026, demonstrating the company's highly efficient mining operations and labour productivity. As a subsidiary of Coal India Limited, MCL also benefits significantly from the strategic support and vast resources of Coal India Limited.**

Further, **MCL has continued to focus on workforce diversity and inclusion across its operations which accounts female work force of 13.72% of the total work force.** The Company supports an inclusive work environment through dedicated gender-focused initiatives, employee development programs and workplace safety mechanisms, including an active Women in Public Sector (WIPS) forum and zero reported cases of sexual harassment during Fiscal 2026. These initiatives reflect MCL's commitment in building a more diverse and inclusive workforce within the mining sector.

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Figure 3.7 Manpower of MCL



Source: MCL annual reports; all years are fiscal years, manpower as at 01st April of end of each Fiscal Year

3.3.5 Financial performance

MCL maintained a strong financial profile during Fiscal 2026, supported by robust coal production, healthy profitability and a strong balance sheet. Total revenue (net revenue from operations) stood at ₹305.49 billion, while EBITDA and PAT were ₹160.85 billion and ₹106.98 billion, respectively. Although profitability moderated compared with Fiscal 2024 levels due to normalization in coal realizations, margins remained strong with EBITDA margin of 47.45% and PAT margin of 31.56%. The company's net worth increased

from ₹161.12 billion in Fiscal 2024 to ₹213.71 billion in Fiscal 2026, reflecting sustained earnings generation and balance sheet strengthening.

Table 3.7 Revenue from operations, EBITDA, PAT, Net worth, and CAPEX spend (₹ million)

Key financial matrix	2024	2025	2026	Q1 2025 (June-25)	Q1 2026 (June-26)	% Change (2024-2026)
Revenue from operations (₹ million)	316,344	313,530	305,496	75,484	80,338	(1.73%)
EBIDTA (₹ million)	166,369	153,311	160,849	36,443	36,414	(1.67%)
EBIDTA Margin (%)	49.53%	46.42%	47.45%	46.16%	43.15%	-
Profit after tax- PAT (₹ million)	118,416	108,251	106,981	24,483	23,988	(4.95%)
PAT Margin (%)	35.25%	32.77%	31.56%	31.01%	28.43%	-
Net worth (₹ million)	161,199	183,435	213,712	207,913	237,690	15.14%
Capex (₹ million)	38,398	29,075	29,296	12,498	5,811	(12.65%)

Source: MCL annual reports; all years are fiscal years

MCL continued to maintain healthy profitability, strong cash generation and a robust balance sheet. These factors position MCL favorably to support Coal India's long-term production growth strategy and India's increasing coal demand requirements.

Table 3.8 Key Financial Ratios

Key financial ratios	2024	2025	2026
Current ratio	2.04	1.96	2.11
Return on net worth (%)	80.56%	62.82%	53.87%
Interest coverage ratio	244.66	215.26	176.27
Asset turnover ratio	225%	189%	163%
Return on avg. capital employed (RoCE)	107.04%	83.17%	73.26%
DSCR	12,752	10,350	3,310

Source: MCL Annual Report; all years are fiscal years

MCL is a debt-free, cash-generative extractive business operating with structurally high returns and comfortable liquidity. Liquidity has remained stable and above the conventional benchmark, with the current ratio held within a narrow band of 1.96 times to 2.11 times, while the debt-equity ratio has stood at nil throughout, leaving the Company with no external borrowing obligations, a position reflected in an interest coverage of approximately 176 times to 244 times, measured against non-cash unwinding charges rather than borrowing costs, and in a debt service coverage ratio running into five figures.

Asset efficiency has eased in parallel, with the asset turnover ratio slipping from 225% to 163% as working capital expanded. On balance, the Company retains a very strong balance sheet with no leverage risk and substantial unutilized debt capacity, while the declining return ratios point to a growing internal accrual base outpacing incremental earnings, representing normalization from an unusually high Fiscal 2023, 2024.

3.3.6 Strength

The Company's competitive position rests on four reinforcing pillars: (i) a resource base and production leadership (ii) a debt-free balance sheet that funds a substantial capital programme entirely from internal accruals; and (iii) an assured-offtake commercial model anchored to the regulated power sector.

(i) **Resource base and production leadership:**

- Strong Resource Advantage: MCL operates in Odisha's Talcher and Ib Valley coalfields, India's first and third largest coalfield in terms of coal resources, part of the largest coal resource-bearing state in India, which accounts for 25.94% of the country's total coal resources.[99]
- Large Reserve Ownership: MCL commands 40.34 billion tonnes of geological reserves, representing 37.80% of Odisha's coal resources and 9.80% of India's total coal resources, providing long-term production visibility.

[99] *GSI, Indian Coal and Lignite Resources - 2026*

- Favourable Mining Geology: The reserve base is predominantly thermal-grade non-coking coal with excellent opencast mining potential, supporting efficient and economical extraction.
- Market-Leading Producer: With 218.31 MT of coal production in Fiscal 2026, MCL is the largest coal-producing subsidiary of Coal India Limited, contributing more than one-fifth of India's total coal production.
- Highly Mechanized Operations: Over 99.8% of production comes from large-scale opencast mines, supported by advanced mining equipment and surface miner technology, enhancing productivity and cost competitiveness.
- Strategic Role in Energy Security: MCL's scale, reserve strength, and production leadership make it a critical contributor to India's energy security and industrial growth.
- Integrated Digital Ecosystem: MCL has implemented SAP across all core business functions and seamlessly integrated it with external platforms covering coal sales, quality assurance, banking, e-auctions, rail logistics, and dispatch management, creating an auditable end-to-end transaction framework.
- Enhanced Efficiency & Transparency: SAP-enabled automation of quality-related customer compensation and settlement processes has strengthened operational transparency, improved customer service, and enhanced overall governance across the sales and quality chain.

(ii) **Financial position:**

- Robust Profitability: MCL generated a PAT of ₹106.98 billion in Fiscal 2026, reflecting strong earnings capability and sustained operational performance.
- Strong Net Worth & Cash Generation: With a net worth of ₹213.71 billion, MCL possesses a substantial capital base and financial resilience to support future growth.
  Virtually Debt-Free Balance Sheet: With borrowings of only ₹31.6 million, MCL maintains an exceptionally low-leverage position, providing significant financial flexibility for capacity expansion, infrastructure development, and strategic investments.

(iii) **Evacuation facility:**

- Through investments in rail connectivity, rapid loading systems, first- mile connectivity projects and dedicated railway infrastructure, MCL has significantly improved its dispatch capabilities. Thus, integrated logistics network reduces evacuation constraints and supports the company's long- term production growth strategy.

The scale of operations and reserve base positions MCL to respond quickly to market trends and emerging opportunities, such as the growing demand for non-coking coal utilized in power generation, while continuing to optimise production and capitalise on evolving industry trends.

Crisil

3.3.7 Key customers

MCL serves a diversified customer base comprising thermal power producers, steel manufacturers, aluminium producers, cement companies and captive power plants. However, the majority of offtakers are major/large power sector customers, which remains the dominant consumer segment and constitutes the backbone of the company's demand profile. During Fiscal 2026, approximately 74% of total coal dispatches were supplied to the power sector under long-term Fuel Supply Agreements (FSAs) and Memoranda of Understanding (MoUs), thereby ensuring stable demand and revenue visibility.

The strength of MCL's customer relationships is reflected in its extensive FSA portfolio. As of Fiscal 2026, the company maintained 241 active Fuel Supply Agreements (FSAs) and MoUs covering an Annual Contracted Quantity (ACQ) of nearly 48.50 MT. These long-term arrangements provide demand stability, reduce market risk and ensure predictable cash flows.

Table 3.9 Key Customers of MCL

Customer Category	Key Customers
Central Power Utilities	NTPC, Adani Power Ltd., JIPL
State Power Utilities	APGENCO, TANGEDCO, MAHAGECO, APPDCL
Aluminium Sector	Vedanta Ltd.
Steel Sector	Sponge Iron/ DRI Units

Source: MCL Annual Report Fiscal 2026; FSA Disclosures.

3.3.8 Quality & Quality Control Systems

MCL has established a comprehensive quality management framework to ensure that coal supplied to customers consistently meets declared grade specifications. Quality assurance activities are integrated across the mining, processing, testing and dispatch value chain, enabling the company to maintain high levels of customer satisfaction and regulatory compliance. MCL also employs third-party sampling and quality verification mechanisms to improve confidence among customers. Independent agencies undertake sampling, testing and verification of dispatched coal at various loading and dispatch points. This practice enhances transparency and minimizes disputes relating to grade conformity.

Table 3.10 Quality outcome metrics for Fiscal 2026

Quality metric	Fiscal 2026
Grade conformity: dispatch quantity basis (provisional)	About 90%, against 87% last year
Weighted average analysed grade versus declared grade	Same for April 2025 to March 2026
NABL-accredited laboratories operated	9
Reconciliation cases	Cumulatively, 87275 reconciliation cases settled in Fiscal 2026, growth of 41% over Fiscal 2025
Movement in consumer complaints	Reduced significantly
Grade reconciliation achieved	100%

Source: MCL Annual Report FY 2025 and 2026

Quality control framework

- Strong Quality Assurance Infrastructure: MCL operates nine NABL-accredited laboratories with regular audits, trained personnel, and standardized testing processes to ensure reliable coal quality assessment and grade conformity. Bomb calorimeter is being procured, to reduce the turnaround time (TAT) for obtaining analysis results
- Advanced Sampling Automation: Deployment of Automatic Mechanical Samplers (AMS) at all operational silo loading facilities and mechanical auger sampling systems at key dispatch points minimizes human intervention and enhances sampling accuracy, transparency, and quality consistency.
- Independent Multi-Layer Quality Verification: Coal quality is validated through third-party sampling agencies empaneled by Power Finance Corporation and the Quality Council of India, providing an additional layer of assurance and reducing quality-related disputes.
- Certified Integrated Management System: MCL's operations are governed by an integrated management framework certified to ISO 9001:2015, ISO 14001:2015, and ISO 45001:2018, ensuring robust quality, environmental, and occupational health and safety standards across the organization. CMPDIL, Ranchi has been engaged as consultant for upgradation of the standards, and new integrated management system manuals complying with the three standards.

Crisil

3.4 Details of Mine location and production

3.4.1 Mine Locations and Production

The company's production portfolio is dominated by Talcher Coalfield operations, although Ib Valley Coalfield also contributes significantly to overall output. Presently, MCL operates 17 coal mines (14- opencast and 3- underground) over 12 areas as described below.

Table 3.11 Details of Operational Mines of MCL and Coal Production for Fiscal 2026

#	Area	Project/Mine	Type	Coalfield	Grade	Coal Production (MT)
1	Jagannath Area	Jagannath OCP	OC	Talcher	G-12	5.14
		Ananta OCP	OC	Talcher	G-12	24.00
2	Bhubaneswari Area	Bhubaneswari OCP	OC	Talcher	G-12	26.48
3	Bharatpur Area	Bharatpur OCP	OC	Talcher	G-12	12.14
4	Talcher Area	Nandira Mine	UG	Talcher	G-8	0.01
5	Lingaraj Area	Lingaraj OCP	OC	Talcher	G-12/G-13	19.07
6	Kaniha Area	Kaniha OCP	OC	Talcher	G-12/G-14	10.02
7	Hingula Area	Hingula OCP	OC	Talcher	G-13/G-14	14.87
		Balram OCP	OC	Talcher	G-13/G-14	3.92
8	IB Valley Area	Lajkura OCP	OC	IB Valley	G-13	4.50

#	Area	Project/Mine	Type	Coalfield	Grade	Coal Production (MT)
		Samaleswari OCP	OC	IB Valley	G-14	13.96
9	Lakhanpur Area	IB Valley OCP (LBL)	OC	IB Valley	G-10/G-12/G-14/G-15	28.55
10	Orient Area	Mine No.1 & 2	UG	IB Valley	G-13	0.13
		HBM Mine	UG	IB Valley	G-14	0.17
11	Mahalaxmi Area	Basundhara West OCP	OC	IB Valley	G-13	0.00
		Siarmal OCP	OC	IB Valley	G-9/G-11/G-13	22.36
12	Basundhara Area	Kulda OCP	OC	IB Valley	G-8/G-13	14.78
		Garjanbahal OCP	OC	IB Valley	G-14	18.20
					Total	**218.31**

Source: MCL Annual Report FY 2026

MCL operates several high-capacity opencast mines which form the backbone of its production profile. The company has developed large-scale integrated mining projects to support its long-term capacity expansion strategy.

Table 3.12 Major Mining Projects and Capacity

Project	Coalfield	Capacity (MTY)
Bhubaneswari OCP	Talcher	50
Siarmal OCP	IB Valley	40
Integrated Kulda-Garjanbahal OCP	IB Valley	40
Bharatpur OCP	Talcher	20
Kaniha OCP	Talcher	30

Source: MCL Annual Report 2025 and 2026

3.4.2 Washery Infrastructure

Coal beneficiation plays an important role in improving coal quality and increasing customer acceptance. MCL currently operates beneficiation infrastructure at the Ib Valley Coalfield with capacity of 10 MTPA utilizing advanced Heavy Media Cyclone technology to reduce ash content and produce cleaner coal for high-efficiency power generation. The washery is operated under a build-operate-maintain model. Raw coal is fed through covered belt conveyors and a pipe conveyor, eliminating transfer points, reducing pollution, spillage and lowering maintenance costs.

Washed coal is primarily used for high-efficiency electricity generation in power stations, enabling power generation companies to meet strict environmental standards. Washed coal reduces fuel quantity requirements (handled and transported) and reduces cost of rail/port transportation for the same energy value. It enhances utilization of installed generation capacity and it also reduces ash volume in both pre-combustion and post combustion stages, which in turn reduces the land requirement for ash disposal.

By improving coal quality and reducing ash generation, the facility supports efficient power production and environmental compliance. MCL has plans to further augment additional 27 MTPA[100] washery capacity (Balaram Washery- 15 MTPA & Kulda-Garjanbahal Washery- 12 MTPA). The IB Valley Washery processed 4.06 MT of raw coal during Fiscal 2026 and produced 3.16 MT of washed coal, resulting in a washery yield of approximately 77.8%. The balance quantity of 0.90 MT comprised rejects generated during the beneficiation process. Certain coal-fired power plants in India have boilers that can only use coal with low ash content. MCL is also expanding its washery capacity to produce washed coal having a lower ash content in order to support the operations of high-efficiency power stations

Table 3.13 Raw coal feed and washed coal production of MCL (MT)

Particulars	2025	2026
Raw coal feed (MT)	5.4	4.1
Washed coal production (MT)	4.3	3.2
Rejects (MT)	1.1	0.9
Yield	80%	78%

[100] *MCL Annual Report 2024-25.*

Crisil

Source: MCL annual reports FY 2025 and 2026

MCL utilizes coal washery rejects in line with Ministry of Coal guidelines, prioritizing energy generation and other environmentally sustainable applications such as construction, land reclamation and brick manufacturing. Its coal beneficiation initiatives support the Government of India's Atma-Nirbhar Bharat vision by enhancing domestic coal utilization, reducing import dependence and strengthening the country's energy security.

3.5 Future expansion plans on coal production

As of fiscal 2026, MCL's coal mining project portfolio (includes expansion, closing, capacity augmentation etc.) comprised 51 projects, of which 40 projects had been completed and 11 projects were under implementation. The sanctioned production capacity of these projects stood at 352.78 MTPA, while the proposed expansion initiatives are expected to add a further 43.36 MTPA of coal production capacity. The projects involve an aggregate capital outlay of approximately ₹411.20 billion and are expected to strengthen MCL's position as one of India's leading coal-producing companies.

Table 3.14 Summary of existing, ongoing and upcoming projects of MCL (as at 31.03.2026)

Project capacity	Nos.	Rated capacity (MTPA)
Completed projects (including exhausted capacity)	40	78.780
On-going projects	11	274.000
Sub-total	**51**	**352.780**
Existing old underground producing mines	2	0.565
Total assessed capacity	-	353.345
Future projects under preparation / approval	5	37.550

Source: MCL Annual Report FY 2026

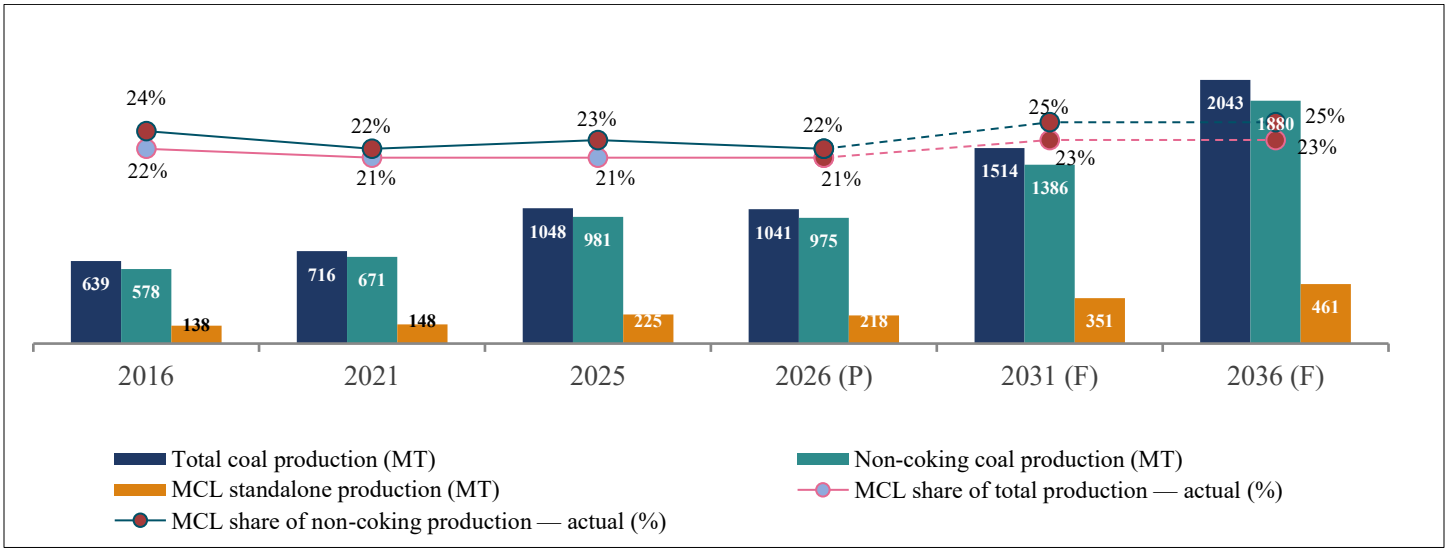
3.6 Market share in Indian end user market

India's coal demand continues to be driven by the power, steel, cement and other industrial sectors. Consequently, domestic coal production has continued to grow, supported by increasing electricity demand and the Government of India's focus on enhancing domestic coal availability. In Fiscal 2026, India's total coal production is projects to reach 1,040.83 MT, of which 975 MT comprised non-coking coal. MCL recorded coal production of 218.31 MT during the year, accounting for approximately 21.0% of total domestic coal production and 22.4% of India's non-coking coal production. In Fiscal 2025, MCL became the first CIL subsidiary to cross the 225 MT production milestone, registering an impressive 16.66% year-on-year growth (from 193.01 MT in Fiscal 2024 to 225.17 MT in Fiscal 2025). This growth rate was more than double CIL's overall consolidated growth of 7.16%, solidifying MCL's position as the primary volume driver of the public mining sector.

Overall coal production is projected to increase to 1514 MT by Fiscal 2031 and 2043 MT by Fiscal 2036, wherein non-coking coal is projected to retain the majority share in overall coal production. With overall coal and non-coking coal production increasing the share of MCL is expected to be ~23% and 25% respectively, for Fiscal 2031 and 2036.

Figure 3.8 MCL Production and Market Share in the Indian Coal Sector (historical and projections)

Crisil



Source: Coal Directory of India, Ministry of coal annual reports, MCL annual reports, Crisil intelligence
Note: F- Forecast, P- Projected, 2026 MCL production figures are actuals as per annual reports of MCL, all years are in fiscal years

3.7 Pricing strategy, operational efficiency & profitability drivers

3.7.1 Pricing Strategy

MCL does not set the headline price of the majority of the coal it sells. Pit-head Run-of-Mine ("RoM") prices for each grade of non-coking coal are notified centrally by Coal India Limited ("CIL"). MCL's commercial discretion therefore operates not on the notified price itself but on the quantum of coal channeled to each sales route, on the premium realized in e-auction, and on the add-on and service charges levied over and above the notified price. The five routes through which MCL monetizes its output, and the degree of pricing discretion attaching to each, are set out below.

Regulated vs. Non-Regulated Pricing Strategy

- Regulated Pricing (Notified Price - FSAs): Applicable to coal supplied under long-term Fuel Supply Agreements (FSAs) to power utilities, fertilizer fertilizer plants, and defense sectors. These prices are set by Coal India Limited (CIL) and provide a highly stable, predictable revenue stream that covers fixed operating costs and ensures steady baseload off-take.
- Non-Regulated Pricing (Market-Driven - e-Auctions): Applicable to coal sold through competitive e-auction windows to non-regulated sectors (NRS). These prices are determined by market demand-supply dynamics, frequently commanding substantial premiums, acting as the primary driver of MCL's incremental profitability.

Table 3.15 Coal Sales Routes, Pricing Basis and Degree of Company Discretion

Sales route	Customer segment	Pricing basis	Regulated / non-regulated	MCL pricing discretion
FSA- Power	State GENCOS, private utilities, IPPs under SHAKTI	CIL notified price by GCV grade band (G1–G17)	Regulated	None on price; ACQ volume negotiated
FSA- non-regulated sector linkage	Cement, sponge iron, steel, aluminium, CPPs	Notified price plus premium bid at linkage auction	Non-regulated	None on base price; premium market-determined
FSA- State Nominated Agencies	State agencies distributing to small and medium industry	Notified price	Non-regulated	None
E-auction (Single Window Mode Agnostic)	Traders, non-linkage consumers	Notified price plus competitively bid premium	Non-regulated	Offered quantity and reserve terms only
Other operating revenue	All deipatch customers	Loading and additional transportation charges; Evacuation Facility Charge	Both	Set by CIL/MCL circular; not part of notified price

Crisil

Source: Ministry of coal reports, Coal Directory

Table 3.16 e-auction performance

Year	Quantity offered (MT)	Quantity booked (MT)	Premium over Notified Price (₹ million)	Premium over Notified Price (Avg. ₹ per tonne)
2024	28.65	22.86	18,334.40	802.07
2025	45.47	22.06	8,933.60	405.02
2026	72.26	26.49	7,283.14	274.90

Source: MCL Annual Reports, all years are fiscal year

3.7.2 Pricing points and unit realization

The distinction between gross sales value and the amount MCL actually retains is material and widening. Gross sales value is struck at the notified price plus applicable add-ons, from its statutory levies i.e., royalty, GST, GST Compensation Cess, DMF and NMET are deducted. Net sales are then augmented by other operating revenue- principally the loading and additional transportation charge ("LATC") and the Evacuation Facility Charge ("EFC")- to arrive at revenue from operations.

Table 3.17 Unit Realization Bridge, Fiscals 2024 to 2026 (₹ per tonne dispatched)

Realization component	2024	2025	2026	FY24–FY26 change
Net sales per tonne	1,568.22	1,448.44	1,416.66	(151.56) / (9.66)%
Revenue from operations per tonne	1,589.51	1,489.75	1,449.65	(139.86) / (8.80)%

Source: MCL Annual Report FY 2025 and 2026

In Fiscal 2026, MCL's net sales realization per tonne fell by 2.2% over the period, while its cost per tonne increased marginally by 3.0%. This squeeze in margin was because of a change in the sales mix: more coal was sold under FSAs at the fixed notified price, and less through e-auctions where buyers pay a premium. As a result, the average price MCL earned on each ton dropped, even though the notified price itself stayed the same.

Table 3.18 Net sales Realization and Unit Cost Fiscals 2024 to 2026 (₹ per tonne)

Particulars	2024	2025	2026
Gross sales realization (₹/T Dispatched)	2,175	1,869	1,739
Revenue from operations (₹/T Dispatched)	1,590	1,490	1,450
Total Operating cost (₹/T Produced)	849	816	840

Source: MCL annual reports, all years are fiscal year

3.7.3 Margin and Profitability

MCL's profitability has remained resilient despite a 4.0 percentage point decline in profit-before-tax margin over the last three years, as the contraction was primarily driven by a modest 2% decline in revenue from operations rather than cost escalation. Additionally, the Company benefits from a strong treasury income stream, with interest on bank deposits and mutual fund investments contributing ₹33,496.90 million in Fiscal 2026, accounting for 31.3% of profit before tax and providing a significant earnings cushion supported by its substantial cash reserves. MCL coal is characterized by low GCV and high ash. Mining and coal quality is dependent on geology and so low grade coal production may impact profitability.

Table 3.19 Profitability Summary, Fiscals 2024 to 2026 (₹ million, unless stated)

Realization component	2024	2025	2026
Revenue from operations	316,343.50	313,530.20	305,495.90
Other income	19,559.90	16,756.30	33,496.90
Total income	335,903.40	330,286.50	338,992.80
Total expenses	180,004.20	188,670.90	195,378.70
Operating EBITDA	146,809.20	136,554.80	127,352.40
Profit before tax	155,899.20	141,615.60	143,614.10
Profit after tax	118,415.50	108,251.20	106,981.20
EBITDA margin on revenue from operations	46.41%	43.55%	41.69%

Realization component	2024	2025	2026
PBT margin on revenue from operations	46.41%	42.88%	42.36%
PAT margin on revenue from operations	35.25%	32.77%	31.56%
Return on average capital employed	107%	83%	73%
EBITDA (operating) per tonne dispatched (₹)	737.66	648.85	604.32
PAT per tonne dispatched (₹)	595.00	514.36	507.65

Source: MCL Annual Reports; all year are fiscal years

3.7.4 Operational improvement initiatives through digital technology adoption

Table 3.20 Digital and Technology Initiatives and Their Operating Impact

Initiative	Status for Fiscal Year 2026	Intended Operating impact
SAP ERP implementation	Live since 01.04.2021 across Materials Management, Plant Maintenance, Human Capital Management, Project System, Finance & Controlling and Sales & Distribution	Single transaction backbone; integrated with banks, MSTC/m-junction e-auction platforms, QCI quality data, Railways FOIS, the Odisha i3ms permit portal, MGR weighbridges and EMD processing
Integrated Command and Control Centre (ICCC)	ICCC became operational on 1 August 2025 with AI-enabled surveillance and monitoring capabilities; connected with more than 3,000 CCTV cameras across mines and facilities.	Centralized monitoring, AI-based analytics, real-time incident detection, operational visibility, safety enhancement and pilferage control.
RFID boom barriers with ANPR	Fully implemented at 174 locations covering all mine entry and exit points	Dual verification of vehicle movement; prevention of unauthorized movement and coal theft
GPS/GPRS vehicle tracking	Over 3,000 vehicles including HEMM and coal transport trucks; extension to overburden vehicles initiated	Geo-fencing and automatic route-deviation alerts across coal logistics
Fuel Level Monitoring System	Installed in HEMM	Surveillance measure to arrest diesel pilferage; supports the reduction in specific diesel consumption
E-procurement	Operating since 15.08.2009; integrated with SAP	Reduced tender cycle time; automated EMD refund to unsuccessful bidders on the next day
Redundant ERP communication network	MPLS-based communication network strengthened with approximately 8 Gbps bandwidth, enterprise connectivity, centralized Wi-Fi and IP-based communication systems.	Improved ERP reliability, business continuity, secure connectivity and reduction of communication downtime.
Coal quality and sampling automation	Automatic Mechanical Samplers operational at all silo loading facilities; mechanical auger sampling systems deployed at six dispatch points.	Improved sample integrity, enhanced grade conformity, reduced disputes and better quality assurance.
Quality settlement automation	Excess surface moisture, oversized stone and unsampled-case settlement rolled out through SAP	Settlement of a long-pending consumer claim category; 28% reduction in consumer complaints and 100% grade reconciliation achieved in Fiscal 2025
Planning, monitoring and cyber security	Expanded deployment of AI analytics, tele-monitoring, GIS/video-based monitoring, Integrated Command Centre capabilities and cybersecurity strengthening during migration to DBIM/cloud-based architecture.	Enhanced mine planning, safety surveillance, predictive monitoring, faster decision-making and improved cyber resilience.
Underground Tele-monitoring System	Tele-monitoring system operational at Orient underground mines.	Improved underground safety, communication and operational monitoring.

Source: MCL Annual Reports

3.8 Risk Management and Stability of Margins

3.10.1 Risk management framework

MCL has established a comprehensive risk management framework encompassing Safety Management Plans (SMPs), HIRA, PHMPs, TARP and ERP to identify, assess, mitigate and monitor risks across its mining operations while ensuring compliance with statutory and DGMS requirements. Risk assessment is conducted by multidisciplinary teams that evaluate risks based on likelihood and severity and classify them into principal, major and operational hazards. The framework is periodically reviewed and updated to incorporate

operational changes, audit findings and incident learnings, strengthening operational resilience and promoting continuous improvement in safety performance.

Table 3.21 Key Risk Categories and Mitigation Approach

Risk Category	Mitigation Approach
Geotechnical & Strata Stability	• Scientific mine planning based on geological and geotechnical studies • Regular monitoring of mine slopes, strata conditions and overburden dumps • Implementation of preventive & corrective measures to minimize slope failure and ground instability risks
Operational & Machinery	• Preventive and predictive maintenance of mining equipment and infrastructure • Adoption of standard operating procedures and operational control measures across mining activities • Continuous training and skill development of employees and contractors to improve operational reliability
Fire, Explosion & Inundation	• Continuous monitoring of mine-related hazards and critical operational parameters • Emergency preparedness and disaster management systems across mining operations • Periodic safety inspections, mock drills and emergency response exercises to enhance readiness
Occupational Health	• Regular health surveillance and occupational medical examinations of employees • Implementation of workplace safety measures, including mandatory use of PPE • Safety awareness, training programs and health initiatives aimed at reducing workplace incidents
Environmental & Community	• Continuous monitoring of environmental parameters and compliance with regulatory requirements • Land reclamation, afforestation and progressive mine closure initiatives • Stakeholder engagement and community development programs in areas surrounding mine operations
Legal & Regulatory	• Continuous monitoring of litigation and regulatory matters with potential operational impact • Adherence to statutory and environmental compliance requirements • Timely legal interventions and coordination with regulatory authorities to minimize business disruption

Source: MCL annual reports, Crisil intelligence

3.9 Revenue Mix

Between Fiscal 2024 and Fiscal 2026 e-auction revenue fell by ₹10,953.70 million, or 21.0%, while FSA revenue fell by ₹2,607.1 million. MCL sold slightly more coal at the notified price and dramatically less at a premium. In Fiscal 2026 our sales revenue from sales of products to the power sector (including captive power plants) contracted by 4.51% compared to Fiscal 2025, as the sales volume also contracted by 1.7%. Additionally, share of renewable energy in electricity generation mix is also increasing, having marginal impact on thermal power sector. However, coal-based generation remains critical for providing reliable baseload power and grid stability.

Table 3.22 Revenue Mix by Type of Coal, Fiscals 2024 to 2026 (in ₹ million)

Customer Type	2024	Share	2025	Share	2026	Share
Raw Coal	311,904.14	99.94%	296,006.36	97.10%	290,812.24	97.41%
Washed Coal	201.06	0.06%	8,825.10	2.90%	7,702.28	2.58%
Washery Rejects	-	-	4.14	0.00%	29.88	0.01%
Net sales revenue	312,105.20	100.00%	304,835.60	100.00%	298,544.40	100.00%

Source: MCL annual reports, all years are fiscal years

Table 3.23 Revenue Mix by Type of Customer, Fiscals 2024 to 2026 (in ₹ million)

Customer Type	2024	Share	2025	Share	2026	Share
Power sector (including CPPs)	263,465.86	84.42%	266,348.72	87.37%	254,337.82	85.19%
Non-power sector	48,639.35	15.58%	38,486.88	12.63%	44,206.58	14.81%
Net sales revenue	312,105.20	100.00%	304,835.60	100.00%	298,544.40	100.00%

Source: MCL annual reports, all years are fiscal years

Table 3.24 Revenue Mix by Type of Contract, Fiscals 2024 to 2026 (in ₹ million)

Contract Type	2024	Share	2025	Share	2026	Share
Fuel Supply Agreement and linkage	259,443.40	83.13%	263,302.50	86.38%	256,836.30	86.03%
E-auction	52,661.80	16.87%	41,533.10	13.62%	41,708.10	13.97%
Net sales revenue	**312,105.20**	**100.00%**	**304,835.60**	**100.00%**	**298,544.40**	**100.00%**

Source: MCL annual reports, all years are fiscal years; other industries include, steel, sponge iron, aluminium, traders, and other small industries

Crisil

3.10 Other New Business Ventures

3.10.1 Coal beneficiation- washeries and deshaling plants

Certain coal-fired power plants in India have boilers that can only use coal with low ash content. MCL is expanding its washery/beneficiation operations, which will enable it to supply increased quantities of higher-grade washed coal to customers including import-based coal-fired power plants, supporting the blending and substitution of imported coal.

Table 3.25 Washery and Deshaling Project Portfolio

Project Location	Capacity	Basis	Status as at 31 March 2026
Ib Valley Washery, Lakhanpur Area	10.0 Mtpa	Build-Operate-Maintain	Commercial operation commenced 15.04.2024. Performance Guarantee Test completed 05.02.2024 under CMPDIL guidance
Deshaling plant / washery, Balaram OCP, Hingula Area	15.0 Mtpa	To be determined	Detailed Feasibility Report work order issued to CMPDIL 23.04.2024; draft report received January 2025; MCL comments submitted; final report expected April 2025, after which tendering will be initiated
Kulda-Garjanbahal Washery, Basundhara Area	12.0 Mtpa	To be determined	Feasibility Report work order issued to CMPDIL February 2025; report under preparation and expected September 2025

Source: MCL Annual Reports

3.10.2 Renewable Energy

Table 3.26 Renewable Energy Portfolio

Asset	Capacity	Status	Capital cost
Grid-connected solar plant (CIL's first)	2 MW	Commissioned 13.10.2014	-
Rooftop solar across ten locations	1.21 MW	Commissioned	-
Ground-mounted solar plant, Patnagarh, Balangir district	50 MW	Commissioned; on-going project schedule	₹3,019.1 million
Rooftop solar plants at various sites	2.5 MW	Commissioned	-
Ground-mounted solar project, Lakhanpur Area	10 MW	Under implementation	₹487.3 million
Ground-mounted solar project, Orient and Ib Valley Areas	25 MW	Under implementation	₹1,492.5 million

Source: MCL Annual Reports

3.10.3 Evacuation and non-mining infrastructure

Table 3.27 Principal Evacuation and Infrastructure Commitments

Project category	Principal components	Indicative capital cost
Rail corridor expansion	Jharsuguda-Barpali-Sardega Phase II including 52 km doubling, Barpali loading bulb and Jharsuguda double-line flyover	₹31,981.2 million
Rail infrastructure, Talcher coalfield	Six road-over-bridges, doubling at four locations, and a new line from Talcher station to Spur 7-8, executed by East Coast Railway on deposit basis	₹6,624.3 million
Dedicated coal corridor road	Bankibahal to Bhedabahal on SH-10, Sundargarh district, 31 km	₹6,711.9 million
First-Mile Connectivity-silos, CHP and rapid loading systems	Ananta CHP-RLS (20 Mtpa), Sardega CHP-RLS (20 Mtpa), Bhubaneswari Silo Phases I and II (10 and 15 Mtpa), Kaniha CHP-RLS (10 Mtpa), Hingula Silo (10 Mtpa), Lakhanpur Silo Phase I (10 Mtpa), Hingula New CHP Link Status: In Fiscal 2026 operational FMC capacity reached 96 MTPA. Bhubaneswari Silo Phase-II (15 MTPA) commissioned during Fiscal 2026; Sardega CHP/RLS and Bhubaneswari Silo Phase-I completed.	Approximately ₹18,280 million across the listed components
Rail connectivity to FMC assets	Dedicated connectivity to the Ananta, Bhubaneswari, Kaniha, Lajkura, Sardega and Lakhanpur loading assets Status: Rail connectivity development in progress. Bhubaneswari rail connectivity Phase-I completed and rake loading commenced; Phase-II under execution.	Approximately ₹12,360 million across the listed components
Port-linked evacuation infrastructure	Connectivity through Visakhapatnam Port and Gopalpur Port Rail movement via Vizag Port resumed on 1 May 2025 after a three-year gap; first rake through Gopalpur Port dispatched on 13 May 2025.	
Social and community infrastructure	Medical college at Talcher (₹4926.2 million), 100-bed cardiac institute at Jharsuguda (₹1035.8 million), piped water schemes, district stadium, public utilities and prefabricated toilets at 232 railway stations	Approximately ₹7,880 million across the listed components

Source: MCL Annual Reports

3.11 Statutory Clearances, Land Acquisition, Project Development, CSR Inititatives

MCL's mining operations and expansion plans are supported by a strong portfolio of statutory approvals, including Environmental Clearances, Forest Clearances, Consent to Establish, Consent to Operate and other mining permits, while proactively addressing land acquisition requirements across the Talcher and Ib Valley coalfields. As of March 31, 2026, the Company had environmental clearances aggregating 330.81 MTPA and CTO capacity of 272.12 MTPA, providing a solid regulatory foundation for current and future production. In addition, MCL had 11 mining projects under implementation with a combined rated capacity of 274 MTPA, supported by multiple rail, coal evacuation and First Mile Connectivity (FMC) infrastructure projects to drive long-term growth.

Table 3.28 Status of Environment (EC), Forest Clearance (FC) and CTO at the end of Fiscal 2026

Company	EC (MTPA)	FC (Ha.)	CTO
Talcher CF	171.10	2,477.85	-
Ib Valley CF	159.71	2,498.43	-
Total as at 01.04.2026	**330.81**	**4,976.28**	**272.12**
Total as at 01.04.2025	**322.81**	**4,951.21**	**265.23**

Source: MCL annual report FY 2026

Land Acquisition and Rehabilitation & Resettlement (R&R): Land acquisition remains a critical enabler for mine expansion, infrastructure development and coal evacuation projects. During Fiscal 2026, MCL continued to acquire land across its operational areas while undertaking rehabilitation and resettlement measures for project-affected families. For MCL land is mostly acquired under Coal Bearing Area (Acquisition and Development) (CBA) Act, 1957.

Table 3.29 Land acquisition & R&R status in Fiscal 2026

Particulars	2024	2025	2026
Land Acquisition	1,679.81 Ha.	631.34 Ha.	-
Land Possession	200.89 Ha.	1,035.55 Ha.	225.47 Ha.
Employments Provided against Land Acquisition, cash in lieu of employment, annuity lieu of employment	300	315	416
Cumulative Rehabilitation Benefits since Inception	18,010 beneficiaries	18,325 beneficiaries	18,772 beneficiaries

Source: MCL annual report FY 2026

Ongoing projects such as Siarmal OCP, Subhadra OCP, Gopalji-Kaniha OCP, Bhubaneswari Expansion OCP and Integrated Kulda-Garjanbahal Expansion OCP continue to acquire progressive land acquisition and statutory approvals as part of their implementation schedules.

CSR Initiatives & Environment stewardship: MCL's CSR initiatives are focused on sustainable community development across its operating areas in Odisha, with emphasis on healthcare, education, skill development, drinking water, sanitation and livelihood enhancement. During Fiscal 2026, the company spent ₹3,758.7 million on CSR activities, exceeding its statutory obligation of ₹3,236.9 million. Key initiatives included support for the Pabitra Mohan Pradhan Medical College and Hospital at Talcher, the Cardiac Institute at Jharsuguda, and various community infrastructure projects. MCL has also develpoed the Chandra Shekhar Azad Eco-Park at Mine No. 4 in Orient area, which integrates a coal museum, a children's park and an active mine incline, offering visitors an underground mining experience. The site has been transformed into a recreational, educational and environmental tourism destination.

Guided by a dedicated Board-level CSR Committee, MCL continues to prioritize long-term social impact, with around 80% of CSR spending directed towards communities in and around its mining areas.

In support of India's 2070 net-zero commitment, MCL has implemented measures to reduce the environmental impact of its mining operations through sustainable resource management, pollution control and regulatory compliance. The company actively promotes environmental stewardship by integrating sustainability principles into its operational and mine reclamation practices.

3.12 SWOT analysis and Unique selling points

Figure 3.9 MCL SWOT Analysis

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Strengths

- Largest CIL subsidiary by output (218.31 MT, Fiscal 2026)
- Talcher + Ib Valley: ~40.4 Bt resource base (37.80% of India's and 9.80% of Odisha's coal resource)
- Consistent track record of growth in coal production, productivity and revenues.
- 99.37% of output by blast-free surface miners
- Port linked evacuation capability (21.5% share in Fiscal 2026)
- Zero net debt; ₹23.50 million long-term borrowing (Fiscal 2026)

Weaknesses

- Loss-making underground operations
- Low-grade (high-ash) resource dominance
- Evacuation dependent on external rail capacity
- Grade conformity at ~90% of sampled quantity
- Single-commodity, single-state concentration

Opportunities

- Only 53.6% of the total resources projectized, providing significant, untapped asset base
- Sustained thermal demand from eastern IPPs
- FMC/silo build-out; Paradip capacity doubling
- Washery and deshaling pipeline (27 Mtpa planned)
- Diversification into power generation (2×800 MW SPV)
- JV route for coal gasification and coal-to-chemicals

Threats

- Captive/commercial blocks won by MCL's own buyers
- Rail rake availability constraining despatch
- Coastal thermal plants able to switch to imports
- Land acquisition, R&R and forest-clearance delays
- Rising levy share compressing net realization

Source: Crisil Intelligence

3.13.5 Unique Selling Propositions

Table 3.30 USPs of MCL

Unique selling proposition	Substantiation	Competitive significance
Scale and assurance of supply	Highest ever dispatch of 210.458 MT in Fiscal 2025; highest single-day dispatch of 0.72 MT on 19.03.2026; highest ever monthly dispatch of 19.56 MT in March 2026	For a base-load thermal generator, continuity of supply outranks price. MCL is the only Indian source able to serve very large annual contracted quantities from a single command area
Blast-free, selectively mined and sized coal	99.4% of Fiscal 2026 production won by surface miners; (-100) mm sizing maintained through CHPs and feeder-breakers	Reduced oversize and rehandling at the consumer end; a quality differentiator not universally available from Indian producers
Independently assured quality infrastructure	Nine NABL-accredited laboratories; Auto Mechanical Sampling (AMS) and mechanical augers at dispatch points to eliminate manual intervention; four PFC-empanelled agencies engaged; 90% (P) overall grade conformity on dispatched qty in Fiscal 2026 against 87% in same period last year	Directly reduces the consumer's grade-slippage risk and the incidence of quality disputes
Demonstrated quality-service improvement	SAP-based settlement of excess surface moisture, oversized stone and unsampled cases	Converts quality assurance from a claims process into a systemic one
Multi-modal evacuation with dedicated infrastructure	Rail dispatch of 137.56 MT (Fiscal 2026); daily wagon loading of 99.8 rakes per day in Fiscal 2026 against 98.2 in Fiscal 2025; MGR circuits serving pithead plants	Access to inland, pithead and coastal consumers from the same asset base
Sovereign counterparty standing	Miniratna company and wholly owned subsidiary of Coal India Limited; risk management carried out per Department of Public Enterprises guidelines	Underpins the enforceability and tenor of long-term Fuel Supply Agreements

Source: Crisil Intelligence

4. Competition Benchmarking

4.1 Market structure

Mahanadi Coalfields Limited (MCL) is the largest coal producing company in India and the biggest of Coal India's subsidiaries, having produced 218.31 MT and dispatched 210.74 MT in Fiscal 2026. This scale rests on two of the country's richest coalfields, Talcher and Ib Valley in Odisha, which together hold close to a quarter of India's coal resources. A large reserve base concentrated in a single state allows MCL to run big, low-strip opencast mines and to keep raising output year after year without moving into new terrain. Its principal operational strength lies in the way it mines, 99.4% (in Fiscal 2026) of its coal is won by mechanized surface miners rather than by drilling and blasting. MCL is the trend-setter in introducing Blast-free technology for winning coal in opencast mine by Surface Miner Technology. **MCL has the largest fleet of surface miners compared to other CIL Subsidiaries, and accounting for ~47% of CIL's surface miner fleet on consolidated basis.** This blast-free method delivers selectively mined, correctly sized coal, supports high grade conformity, and avoids much of the cost, safety and environmental disruption associated with conventional opencast working.

MCL's second advantage is assurance of supply and quality, backed by scale and infrastructure. Its size lets it serve very large annual contracted quantities from a single command area, which matters more to a base-load power producer than price alone. Its highest-ever single-day dispatch of 0.72 MT (19 March 2026)[101] and highest-ever monthly dispatch of 19.56 MT (March 2026) underline this reliability. Further, the combination of predominantly opencast mining operations and surface miner- led mechanization may facilitate in low production cost compared to traditional mining methods. Coal quality is independently assured through nine NABL-accredited laboratories and third-party sampling covering the bulk of dispatch, reducing the grade-slippage risk that consumers most often dispute. Evacuation is multi-modal, combining rail, road and dedicated Merry-Go-Round circuits with a growing network of silos and rapid-loading systems, giving MCL access to inland, pit-head and coastal consumers from the same asset base.

India's non-coking coal production increased from 671.0 MT in Fiscal 2021 to 975.0 MT in Fiscal 2026, reflecting steady growth in domestic coal output and continued efforts to enhance energy security. The non-coking coal industry remains heavily dominated by Coal India Limited (CIL) subsidiaries, with Mahanadi Coalfields Limited (MCL) and South Eastern Coalfields Limited (SECL) emerging as the two largest producers. MCL is well positioned to capitalize on the demand of non-coking coal in India.

Key Operational highlights and advantages of MCL-

- Largest CIL subsidiary, dispatching 210.7 MT in Fiscal 2026 (28.3% of CIL's total dispatch) with a pure-play non-coking coal focus
- Low-cost opencast operations in Odisha's Talcher and IB Valley coalfields with shallow, thick seams and highly favorable stripping ratios.
- Output per Manshift (OMS) of 30.3 tonnes in Fiscal 2026, which is nearly 2.4 times the consolidated CIL average.
- 99.4% blast-free extraction using Surface Miners, paired with automated First-Mile Connectivity (FMC) and Rapid Loading Systems (RLS) for seamless rail evacuation.

In Fiscal 2026, MCL produced 218.31 MT of non-coking coal, accounting for approximately 22.4% of India's total non-coking coal production. SECL followed with production of 176.06 MT, contributing around 18.1% of the national output. Together, the two companies accounted for more than 40% of India's total non-coking coal production, highlighting their critical role in meeting the coal requirements of the power sector and other industries.

4.1.1 Imports of non-coking coal

India is one of the largest consumers of coal globally and relies on imports to supplement domestic production, particularly for power generation and industrial use. In fiscal 2025, total coal imports of India was 243.622 MT, out of which 186.222 MT was non-coking coal, value at ₹1,463.23 billion. In Fiscal 2026 total coal imports increased marginally to 246.37 MT, out of which 180.04 MT was non-coking coal, valued at ₹1,315.73 billion.

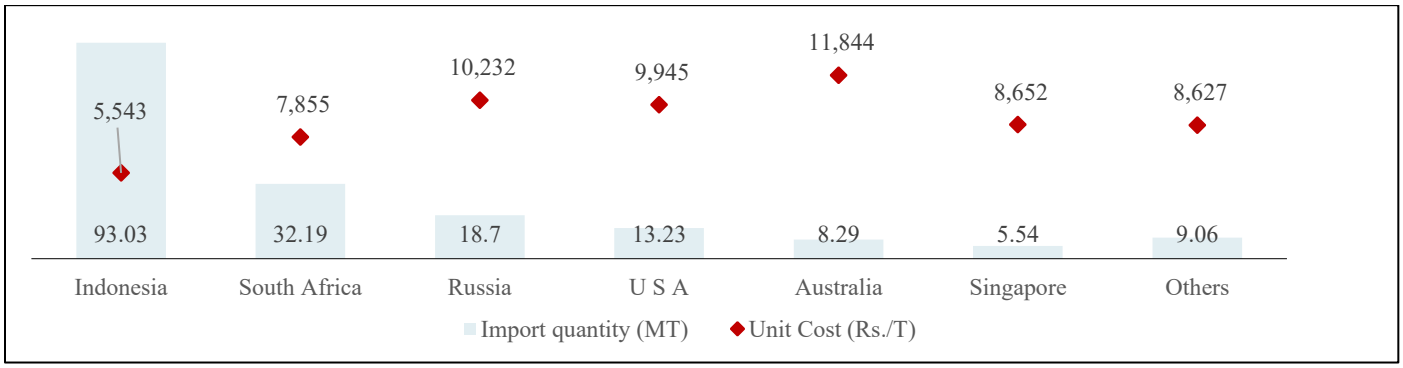
In Fiscal 2026, Indonesia remained the largest source of India's non-coking coal imports, supplying 93.03 MT and accounting for 52% of total imports. It was followed by South Africa with 32.19 MT (18% share), Russia with 18.7 MT (10% share), and the USA with

[101] *MCL annual report FY 2026*

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13.23 MT (7% share). Australia contributed 8.29 MT (5% share) and while other countries accounted for the remaining 14.60 MT (8.0% share collectively).

Figure 4.1 India non-coking coal imports (MT) and unit cost from different countries in Fiscal 2026



Source: Ministry of Coal- coal Import Export statistics; Trade Intelligence and Analytics Portal (Dept of commerce), unit cost estimated based on the total value of imports

4.2 Peers for MCL

The Indian coal industry is highly fragmented with a presence of few large players and several medium and small players, dominated by public sector producers, with Coal India Limited accounting for 73.8% of domestic coal production in Fiscal 2026, although competitive intensity has increased with the entry of new players. Coal India Limited plays a pivotal role in India's energy generation and significantly contributes to the country's industrial growth. CIL is also worlds single largest coal producing company[102]

Mahanadi Coalfields Limited (MCL) is the largest coal producing company in India and the biggest of Coal India's subsidiaries. Among Coal India Limited's subsidiaries, South Eastern Coalfields Limited is the next largest producer of coal after MCL and can be considered as MCL's primary competitor(s) in the non-coking coal segment. This scale rests on two of the country's richest coalfields, Talcher and IB Valley in Odisha, which together hold close to a quarter of India's coal reserves. A large reserve base concentrated in a single state allows MCL to run big, low-strip opencast mines and to keep raising output year after year without moving into new terrain.

Mahanadi Coalfields Limited (MCL) is one of the largest coal-producing subsidiaries of Coal India Limited (CIL) and primarily operates in the non-coking coal segment. Given its strong presence in domestic coal production, MCL's key peers include both public and private sector coal producers with significant production from captive and commercial coal blocks.

For this analysis, Coal India Limited (CIL) and Bharat Coking Coal Limited (BCCL), National Mineral Development Corporation (NMDC), have been considered the primary peer among CIL subsidiaries due to merchant sales. In addition, Gujarat Mineral Development Corporation Limited (GMDC) and Manganese Ore India Limited (MOIL) have been considered relevant peers based on their production volumes and growing contribution to India's domestic mineral output through captive and commercial mining operations.

Global coal production is estimated to reach 9,111 MT in CY 2025, out of which non-coking coal and lignite will account for 9,985 MT (88%) of the world output. non-coking coal production is heavily concentrated in Asia pacific region which is projected to produce ~6,414 MT of non-coking coal in CY 2025, representing ~80% of global non-coking coal output. Within the region, China is estimated to produce ~4,091 MT of non-coking coal, India 1,147 MT and Australia 294 MT. Despite their modest production share in global non-coking coal output, Indonesia and Australia dominate international trade, estimated to export (E) 499 MT and 210 MT of non-coking coal respectively, against global non-coking coal exports of 1,116 MT in CY 2025.[103]

In international peers, Yancoal Australia and Bukit Asam- Indonesia have been considered as major coal producing peers.

These entities collectively represent the major participants in the domestic as well as international coal and non-coal mineral market and serve as an appropriate peer group for assessing MCL's operational and market position.

[102] *As per CIL website- https://archive.coalindia.in/en-us/company/aboutus.aspx*
[103] *IEA Coal 2025*

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4.3 Financial Benchmarking

4.3.1 Total Revenue

MCL reported revenue from operations of ₹316,343.50 million in Fiscal 2024, which moderated to ₹305,495.90 million in Fiscal 2026, reflecting a CAGR of -1.73% during the period. Among domestic peers, CIL recorded revenue growth from ₹1,447,624.20 million in Fiscal 2024 to ₹1,684,002.90 million in Fiscal 2026 at a CAGR of 7.86%, while NMDC reported the strongest growth with revenue increasing from ₹213,078.50 million to ₹320,708.90 million, representing a CAGR of 22.68%. BCCL recorded revenue from operations of ₹163,143.60 million in Fiscal 2024, which declined to ₹136,447.80 million in Fiscal 2026, registering a CAGR of -8.55%. Among international peers, while Yancoal Australia recorded a decline of 12.54% from 2023 to 2025 and Bukit Asam (Indonesia) reported a growth of 5.27% during the same period.

Table 4.1 Revenue from operations (Rs million) and CAGR Fiscal 2024-2026 for MCL and other companies

Primary Peers	2024	2025	2026	Q1 FY26 (June-25)	Q1 FY27 (June-26)	CAGR% (2024-26)
MCL	316,343.50	313,530.20	305,495.90	75,483.70	80,337.70	(1.73)%
CIL	1,447,624.20	1,691,773.70	1,684,002.90	429,192.00	462,548.00	7.86%
BCCL	163,143.60	159,172.10	136,447.80	37,195.90	35,872.70	(8.55)%
NMDC	213,078.50	239,055.20	320,708.90	67,388.60	67,952.50	22.68%
Other Mining Peers						
GMDC	24,628.80	28,508.40	26,533.80	7,326.00	9,066.40	3.80%
MOIL	14,494.25	15,849.40	14,728.38	3,480.59	3,708.83	0.80%
International Peers	**2023**	**2024**	**2025**			**CAGR% (2023-25)**
Yancoal Australia	439,569.78	365,256.58	358,145.86	149,179.94	196,889.62	(12.54)%
Bukit Asam- Indonesia	208,506.64	226,408.63	228,900.54	51,361.82	55,166.35	5.27%

Source: Annual Reports FY 24,25,26 and quarterly statement announcement (unaudited for Q1'27) of MCL, CIL, BCCL NMDC, GMDC, MOIL; all years are fiscal year for Indian entities

Note: Total revenue from operations is provided if stated explicitly in annual financial statements as revenue from sales etc.; if not provided explicitly it is calculated as total revenue- other income

Note: International peers' values are for FY 23,24,25 (FY refers to 1st Jan to 31st as per respective international reporting standard); FY 26 values are not published yet; for Yancoal values in quarterly column are for H1 2025 and 2026, for Bukit Asam these values are for Q1 2025 and 2026;

Note: For international peers values as reported are converted to INR using the currency conversion (as at 31st Dec) for the respective period.

AUD (Australian dollar) to INR: 2023-56.51, 2024-53.24, 2025-60.20, H1 2025-55.77, H1 2026-65.11;

IDR (Indonesian Rupiah) to INR: 2023-0.00542, 2024- 0.00529, 2025- 0.00537, Q1 2025-0.00516, Q1 2026-0.00556

4.3.2 EBIDTA

MCL reported EBITDA of ₹166,369.10 million in Fiscal 2024, which declined marginally (CAGR -1.67%) to ₹160,849.30 million in Fiscal 2026. Among domestic peers, CIL's EBITDA decreased from ₹563,674.00 million to ₹532,760.20 million (CAGR: -2.78%), while NMDC recorded growth from ₹83,815.60 million to ₹107,479.00 million (CAGR: 13.24%). BCCL's EBITDA declined sharply with a CAGR of -43.88%. Among international peers, Yancoal Australia reported a decline in EBITDA from ₹198,761.50 million in Fiscal 2023 to ₹86,872.50 million in Fiscal 2025 (CAGR: -33.89%), while Bukit Asam (Indonesia) recorded a decline from ₹55,189.94 million to ₹32,790.79 million (CAGR: -22.92%) over the same period. Despite the moderation in EBITDA during the period, MCL continued to maintain a strong profitability profile in Fiscal 2026. The company's large production base, efficient mining operations and dominant position within Coal India Limited continue to support its profitability and cash generation capabilities.

Table 4.2 EBITDA (₹ million) of MCL and other companies

Primary Peers	2024	2025	2026	Q1 FY26 (June-25)	Q1 FY27 (June-26)	CAGR % (2024-26)
MCL	166,369.10	153,311.10	160,849.30	36,442.80	36,413.70	(1.67)%
CIL	563,674.00	571,392.50	532,760.20	143,484.40	143,493.00	(2.78)%
BCCL	24,938.90	23,560.60	7,853.80	3,732.80	715.00	(43.88)%
NMDC	83,815.60	97,419.90	107,479.00	27,786.00	28,157.20	13.24%
Other Mining Peers						
GMDC	8,808.80	9,935.10	13,902.70	2,469.00	2,671.50	25.63%
MOIL	5,312.35	6,388.76	5,076.44	1,614.65	1,560.50	(2.25)%
International Peers	**2023**	**2024**	**2025**			**CAGR% (2023-25)**
Yancoal Australia	198,761.50	131,939.62	86,872.50	35,858.95	33,986.90	(33.89)%
Bukit Asam- Indonesia	55,189.84	44,153.91	32,790.79	5,451.66	8,647.06	(22.92)%

Source: Annual Reports FY 24,25,26 and quarterly statement announcement (unaudited for Q1'27) of MCL, CIL, BCCL NMDC, GMDC, MOIL; all years are fiscal year for Indian entities; BCCL CAGR is not available as FY 26 operating EBDITA is negative

Note: Operating EBITDA is calculated as profit / (loss) before tax (PBT) for the period / year, plus finance costs, and depreciation and amortization expense less other income

Note: International peers values are for FY 23,24,25 (FY refers to 1st Jan to 31st as per respective international reporting standard); FY 26 values are not published yet; for Yancoal values in quarterly column are for H1 2025 and 2026, for Bukit Asam these values are for Q1 2025 and 2026;

Note: For international peers values as reported are converted to INR using the currency conversion (as at 31st Dec) for the respective period.

AUD (Australian dollar) to INR: 2023-56.51, 2024-53.24, 2025-60.20, H1 2025-55.77, H1 2026-65.11;

IDR (Indonesian Rupiah) to INR: 2023-0.00542, 2024- 0.00529, 2025- 0.00537, Q1 2025-0.00516, Q1 2026-0.00556

Table 4.3 EBITDA margin (as % of total income)

Primary Peers	2024	2025	2026	Q1 FY26 (June-25)	Q1 FY27 (June-26)
MCL	49.53%	46.42%	47.45%	46.16%	43.15%
CIL	36.91%	31.98%	29.65%	32.22%	29.71%
BCCL	14.91%	14.27%	5.26%	9.57%	1.92%
NMDC	36.96%	38.21%	32.03%	39.47%	39.42%
Other Mining Peers					
GMDC	32.23%	31.05%	45.18%	27.30%	27.57%
MOIL	34.43%	37.66%	32.42%	43.58%	39.90%
International Peers	**2023**	**2024**	**2025**		
Yancoal Australia	45.07%	35.30%	23.96%	23.76%	17.17%
Bukit Asam- Indonesia	26.04%	19.36%	14.29%	10.51%	15.59%

Source: Annual Reports FY 24,25,26 and quarterly statement announcement (unaudited for Q1'27) of MCL, CIL, BCCL NMDC, GMDC, MOIL; all years are fiscal year for Indian entities

Note: EBIDTA margin is calculated as EBDITA divided by the total revenue/ income

Note: International peers' values are for FY 23,24,25 (FY refers to 1st Jan to 31st as per respective international reporting standard); FY 26 values are not published yet; for Yancoal values in quarterly column are for H1 2025 and 2026, for Bukit Asam these values are for Q1 2025 and 2026

4.3.3 Operating EBIDTA

MCL's Operating EBITDA was ₹146,809.20 million in Fiscal 2024, which declined to ₹127,352.40 million in Fiscal 2026, reflecting a CAGR of (6.86)% during the period. Among domestic peers, CIL recorded a decline in Operating EBITDA from ₹483,983.20 million in Fiscal 2024 to ₹420,003.40 million in Fiscal 2026, representing a CAGR of (6.84)%, while NMDC reported growth from ₹70,108.80 million to ₹92,595.20 million at a CAGR of 14.92%. BCCL's Operating EBITDA declined from ₹20,872.20 million in Fiscal 2024 to a loss of ₹4,941.00 million in Fiscal 2026. Among international peers, Yancoal Australia reported a decline of 37.38% in Operating EBITDA from Fiscal 2023 to Fiscal 2025, Bukit Asam (Indonesia) recorded declines of 20.69%, during the same period.

Table 4.4 Operating EBITDA (₹ million) of MCL and other companies

Primary Peers	2024	2025	2026	Q1 FY26 (June-25)	Q1 FY27 (June-26)	CAGR % (2024-26)
MCL	146,809.20	136,554.80	127,352.40	32,982.90	32,372.20	(6.86)%
CIL	483,983.20	476,672.60	420,003.40	127,325.80	123,088.30	(6.84)%
BCCL	20,872.20	17,569.80	(4,941.00)	1,910.80	(644.70)	***NA***
NMDC	70,108.80	81,486.70	92,595.20	24,784.90	24,684.30	14.92%
Other Mining Peers						
GMDC	6,107.10	6,388.00	9,664.30	1,692.00	1,910.00	25.80%
MOIL	4,377 .15	5,275.37	4,146.43	1,390.00	1,358.00	(2.67)%
International Peers	**2023**	**2024**	**2025**			**CAGR% (2023-25)**
Yancoal Australia	197,292.12	123,473.76	82,417.50	34,130.14	32,945.15	(37.38%
Bukit Asam- Indonesia	51,731.42	42,473.45	32,234.55	4,946.54	8,346.63	(20.69)%

Source: Annual Reports FY 24,25,26 and quarterly statement announcement (unaudited for Q1'27) of MCL, CIL, BCCL NMDC, GMDC, MOIL; all years are fiscal year for Indian entities; BCCL CAGR is not available as FY 26 operating EBDITA is negative

Note: Operating EBITDA is calculated as profit / (loss) before tax (PBT) for the period / year, plus finance costs, and depreciation and amortization expense less other income

Note: International peers values are for FY 23,24,25 (FY refers to 1st Jan to 31st as per respective international reporting standard); FY 26 values are not published yet; for Yancoal values in quarterly column are for H1 2025 and 2026, for Bukit Asam these values are for Q1 2025 and 2026;

Note: For international peers values as reported are converted to INR using the currency conversion (as at 31st Dec) for the respective period.

AUD (Australian dollar) to INR: 2023-56.51, 2024-53.24, 2025-60.20, H1 2025-55.77, H1 2026-65.11;

IDR (Indonesian Rupiah) to INR: 2023-0.00542, 2024- 0.00529, 2025- 0.00537, Q1 2025-0.00516, Q1 2026-0.00556

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MCL's operating EBITDA margin was 46.41% in Fiscal 2024, which moderated to 41.69% in Fiscal 2026. Among domestic peers, CIL's EBITDA margin declined from 33.43% in Fiscal 2024 to 24.94% in Fiscal 2026, while NMDC's EBITDA margin was 32.90% in Fiscal 2024 and 28.87% in Fiscal 2026. GMDC improved its margin from 24.74% in Fiscal 2024 to 36.42% in Fiscal 2026. BCCL's EBITDA margin deteriorated from 12.79% in Fiscal 2024 to (3.62)% in Fiscal 2026. Among international peers, Yancoal Australia reported declines in EBITDA margin from 44.88% to 23.01% from Fiscal 2023 to Fiscal 2025, while Bukit Asam (Indonesia) recorded a decline from 24.81% to 14.08% during the same period. Despite the slight moderation in Fiscal 2026, MCL continued to outperform its peers on profitability metrics, highlighting the benefits of its large-scale opencast mining operations, efficient cost structure and strong operational performance.

Table 4.5 Operating EBITDA margin (as % of revenue from operations)

Primary Peers	2024	2025	2026	Q1 FY26 (June-25)	Q1 FY27 (June-26)
MCL	46.41%	43.55%	41.69%	43.70%	40.30%
CIL	33.43%	28.18%	24.94%	29.67%	26.61%
BCCL	12.79%	11.04%	(3.62)%	5.14%	(1.80)%
NMDC	32.90%	34.09%	28.87%	36.78%	36.33%
Other Mining Peers					
GMDC	24.74%	22.41%	36.42%	23.12%	21.13%
MOIL	30.20%	33.28%	28.22%	31.31%	36.58%
International Peers	**2023**	**2024**	**2025**		
Yancoal Australia	44.88%	33.80%	23.01%	22.88%	16.73%
Bukit Asam- Indonesia	24.81%	18.76%	14.08%	9.63%	15.13%

Source: Annual Reports FY 24,25,26 and quarterly statement announcement (unaudited for Q1'27) of MCL, CIL, BCCL NMDC, GMDC, MOIL; all years are fiscal year for Indian entities
Note: Operating EBIDTA margin is calculated as Operating EBDITA divided by the Revenue from Operations
Note: International peers values are for FY 23,24,25 (FY refers to 1st Jan to 31st as per respective international reporting standard); FY 26 values are not published yet; for Yancoal values in quarterly column are for H1 2025 and 2026, for Bukit Asam these values are for Q1 2025 and 2026

4.3.4 Profit after tax (PAT)

MCL reported PAT of ₹118,415.50 million in Fiscal 2024, which declined to ₹106,981.20 million in Fiscal 2026, reflecting a CAGR of -4.95% during the period. Among domestic peers, CIL's PAT decreased from ₹373,691.30 million in Fiscal 2024 to ₹310,705.80 million in Fiscal 2026, representing a CAGR of -8.81%, while NMDC reported growth from ₹55,712.50 million to ₹74,146.90 million at a CAGR of 15.36%. BCCL's PAT declined sharply from ₹15,644.60 million in Fiscal 2024 to ₹1,282.80 million in Fiscal 2026, registering a CAGR of -71.36%. Among international peers, Yancoal Australia and Bukit Asam (Indonesia) recorded declines (CAGR) of (50.82)% and (31.42)%, respectively, from Fiscal 2023 to Fiscal 2025. Overall, MCL maintained a strong profitability position among the selected companies, supported by its large production base, efficient mining operations and strategic importance within Coal India Limited.

Table 4.6 PAT (₹ million) of MCL and other companies

Primary Peers	2024	2025	2026	Q1 FY26 (June-25)	Q1 FY27 (June-26)	CAGR% (2024-26)
MCL	118,415.50	108,251.20	106,981.20	24,483.30	23,987.80	(4.95)%
CIL	373,691.30	354,497.20	310,705.80	87,878.40	88,498.10	(8.82)%
BCCL	15,644.60	12,401.90	1,282.80	1,768.70	(680.90)	(71.36)%
NMDC	55,712.50	65,388.20	74,146.90	19,674.60	20,057.10	15.36%
Other Mining Peers						
GMDC	5,973.60	6,798.50	9,566.70	1,637.70	1,634.30	26.56%
MOIL	2,933.41	3,816.37	2,674.79	515.06	876.16	(4.50)%
International Companies	**2023**	**2024**	**2025**			**CAGR% (2023-25)**
Yancoal Australia	102,799.88	64,745.19	26,489.19	9,090.22	1,106.85	(50.82)%
Bukit Asam- Indonesia	34,088.62	27,209.41	15,881.44	2,046.39	4,478.49	(31.42)%

Source: Annual Reports FY 24,25,26 and quarterly statement announcement (unaudited for Q1'27) of MCL, CIL, BCCL NMDC, GMDC, MOIL; all years are fiscal year for Indian entities
Note: International peers values are for FY 23,24,25 (FY refers to 1st Jan to 31st as per respective international reporting standard); FY 26 values are not published yet; for Yancoal values in quarterly column are for H1 2025 and 2026, for Bukit asam these values are for Q1 2025 and 2026;
Note: For international peers values as reported are converted to INR using the currency conversion (as at 31st Dec) for the respective period.
AUD (Australian dollar) to INR: 2023-56.51, 2024-53.24, 2025-60.20, H1 2025-55.77, H1 2026-65.11;
IDR (Indonesian Rupiah) to INR: 2023-0.00542, 2024- 0.00529, 2025- 0.00537, Q1 2025-0.00516, Q1 2026-0.00556

Crisil

MCL reported a PAT margin of 35.25% in Fiscal 2024, which moderated to 31.56% in Fiscal 2026. Among domestic peers, CIL's PAT margin declined from 24.47% in Fiscal 2024 to 17.29% in Fiscal 2026, while NMDC reported a PAT margin of 24.57% and 22.09% in same period, respectively. BCCL's PAT margin declined significantly from 9.36% in Fiscal 2024 to 0.86% in Fiscal 2026. Among international peers, Yancoal Australia reported a decline in PAT margin from 23.31% in Fiscal 2023 to 7.31% in Fiscal 2025 and Bukit Asam (Indonesia) reported a decline from 16.08% to 6.92% during the same period.

MCL's superior PAT margins highlight its strong operational efficiency, economies of scale and ability to generate higher earnings relative to its revenue base compared with the selected peer companies.

Table 4.7 PAT margin (as % of total income)

Primary Peers	2024	2025	2026	Q1 FY26 (June-25)	Q1 FY27 (June-26)
MCL	35.25%	32.77%	31.56%	31.01%	28.43%
CIL	24.47%	19.84%	17.29%	19.73%	18.32%
BCCL	9.36%	7.51%	0.86%	4.53%	(1.83)%
NMDC	24.57%	25.64%	22.09%	27.95%	28.08%
Other Mining Peers					
GMDC	21.86%	21.25%	31.09%	18.11%	16.87%
MOIL	19.01%	22.50%	17.08%	13.90%	22.40%
International Peers	**2023**	**2024**	**2025**	**Q1 FY25 (Mar-25)**	**Q1FY26 (Mar-26)**
Yancoal Australia	23.31%	17.32%	7.31%	6.02%	0.56%
Bukit Asam- Indonesia	16.08%	11.93%	6.92%	3.95%	8.07%

Source: Annual Reports FY 24,25,26 and quarterly statement announcement (unaudited for Q1'27) of MCL, CIL, BCCL NMDC, GMDC, MOIL; all years are fiscal year for Indian entities
Note: PAT margin refers to the percentage derived by dividing profit after tax by total income
Note: International peers values are for FY 23,24,25 (FY refers to 1st Jan to 31st as per respective international reporting standard); FY 26 values are not published yet; for Yancoal values in quarterly column are for H1 2025 and 2026, for Bukit Asam these values are for Q1 2025 and 2026;

4.3.5 Return on average capital employed (RoACE) (%)

Return on Average Capital Employed (RoACE) measures how efficiently a company generates operating profits from its capital employed. Among the peer companies, MCL reported the highest RoACE of 73.26% in Fiscal 2026, despite a decline from 107.04% in Fiscal 2024. Among domestic peers, CIL's RoACE declined from 63.73% in Fiscal 2024 to 36.34% in Fiscal 2026, while NMDC maintained a relatively stable RoCE of 33.27% in Fiscal 2024 and 32.22% in Fiscal 2026. BCCL's RoACE decreased significantly from 47.2% in Fiscal 2024 to 5.0% in Fiscal 2026. Among international peers, Yancoal Australia reported a decline in RoCE from 30.55% in Fiscal 2023 to 7.25% in Fiscal 2025, and Bukit Asam (Indonesia) reported a decline from 33.34% to 17.72% during the same period. While RoCE moderated across most companies during the period, MCL continued to outperform peers, indicating superior efficiency in utilizing capital to generate returns.

Table 4.8 RoACE of MCL and other companies

Primary Peers	2024	2025	2026
MCL	107.04%	83.17%	73.26%
CIL	63.73%	48.07%	36.34%
BCCL	47.20%	30.13%	5.03%
NMDC	33.27%	33.68%	32.22%
Other Mining Peers			
GMDC	13.50%	14.10%	18.30%
MOIL	16.48%	19.12%	12.60%
International Peers	**2023**	**2024**	**2025**
Yancoal Australia	30.55%	19.36%	7.25%
Bukit Asam- Indonesia	33.34%	29.78%	17.72%

Source: Annual Reports FY 24,25,26 of MCL, CIL, BCCL NMDC, GMDC, MOIL; all years are fiscal year for Indian entities
Note: RoACE refers to EBIT divided by average capital employed for the year/period. EBIT means restated profit / (loss) for the period / year, plus finance costs and total taxes. Capital employed is the total equity attributable to equity-holders of the company, as appearing in Restated Financial Information plus non-current borrowings. Average capital employed is the sum of opening and closing capital employed divided by two.
Note: International peers values are for FY 23,24,25 (FY refers to 1st Jan to 31st as per respective international reporting standard); FY 26 values are not published yet

Crisil

4.3.6 Return on net worth (RoNW %)

Return on net worth measures the company's ability to generate profits from shareholders' funds. Among the peer companies, MCL reported the highest RoNW of 53.87% in Fiscal 2026, followed by CIL at 27.78%, NMDC at 23.28%. Among domestic peers, CIL's RoNW declined from 50.62% in Fiscal 2024 to 27.78% in Fiscal 2026, while NMDC maintained a relatively stable RoNW. BCCL's RoNW decreased significantly from 34.21% in Fiscal 2024 to 2.07% in Fiscal 2026. Among international peers, Yancoal Australia reported a decline in RoNW from 22.01% in Fiscal 2023 to 4.83% in Fiscal 2025, and Bukit Asam (Indonesia) reported a decline from 25.11% to 13.16% for the same period. MCL consistently outperformed its peers, highlighting its superior profitability and efficient utilization of shareholders' equity.

Table 4.9 Return on net worth (RoNW) of MCL and other companies

Primary Peers	2024	2025	2026
MCL	80.56%	62.82%	53.87%
CIL	50.62%	37.40%	27.78%
BCCL	34.21%	20.83%	2.07%
NMDC	23.17%	23.68%	23.28%
Other Mining Peers			
GMDC	10.03%	10.85%	14.08%
MOIL	12.42%	14.81%	9.79%
International Peers	**2023**	**2024**	**2025**
Yancoal Australia	22.01%	13.76%	4.83%
Bukit Asam- Indonesia	25.11%	23.41%	13.16%

Source: Annual Reports FY 24,25,26 of MCL, CIL, BCCL NMDC, GMDC, MOIL; all years are fiscal year for Indian entities
Note: Return on Net Worth is calculated as restated profit / (loss) for the period / year divided by average net worth. Net Worth is the total equity attributable to equity-holders of the company, as appeared in the Restated Financial Information less OCI - Re-measurement of Defined Benefits Plans (net of Tax) Reserve. Average net worth is the sum of opening and closing net worth divided by two.
Note: International peers values are for FY 23,24,25 (FY refers to 1st Jan to 31st as per respective international reporting standard); FY 26 values are not published yet

4.3.7 Current ratio

The current ratio measures a company's ability to meet its short-term obligations using its current assets. Among the domestic peer companies in Fiscal 2026, GMDC reported the highest current ratio of 4.14, followed by MOIL at 3.02, NMDC at 2.43, MCL at 2.11, CIL at 1.86, and BCCL at 0.93. MCL maintained a strong liquidity position throughout Fiscal 2024 to Fiscal 2026, with its current ratio improving from 2.04 in Fiscal 2024 to 2.11 in Fiscal 2026. CIL's current ratio increased from 1.79 in Fiscal 2024 to 1.86 in Fiscal 2026, while NMDC maintained a healthy current ratio above 2.43 during the period. BCCL's current ratio declined significantly from 1.21 in Fiscal 2024 to 0.93 in Fiscal 2026. Among international peers, Yancoal Australia reported a current ratio of 2.42 in Fiscal 2023, which moderated to 2.32 in Fiscal 2025 and Bukit Asam (Indonesia) reported a current ratio of 1.52 in Fiscal 2023 and 1.12 in Fiscal 2025

Table 4.10 Current ratio of MCL and other companies

Primary Peers	2024	2025	2026	Q1 FY26 (June-25)	Q1 FY27 (June-26)
MCL	2.04	1.96	2.11	2.13	2.26
CIL	1.79	1.57	1.86	1.86	1.90
BCCL	1.21	1.19	0.93	0.90	0.85
NMDC	2.53	2.42	2.43	NA	NA
Other Mining Peers					
GMDC	4.60	4.66	4.14	NA	NA
MOIL	4.11	3.83	3.02	NA	NA
International Peers	**2023**	**2024**	**2025**		
Yancoal Australia	2.42	2.87	2.32	2.39	2.75
Bukit Asam- Indonesia	1.52	1.27	1.12	NA	1.27

Source: Annual Reports FY 24,25,26 and quarterly statement announcement (unaudited for Q1 '27) of MCL, CIL, BCCL NMDC, GMDC, MOIL; all years are fiscal year for Indian entities
Note: Current ratio has been calculated as current assets divided by current liabilities as at the end of the financial year/ reporting year/ period; in quarterly financial results details of assets & liabilities have not been declared, hence current ratio can not be derived for Indian peers (NMDC, GMDC, MOIL)
Note: International peers values are for FY 23,24,25 (FY refers to 1st Jan to 31st as per respective international reporting standard); FY 26 values are not published yet; for Yancoal values in quarterly column are for H1 2025 and 2026, for Bukit Asam these values are for Q1 2025 and 2026

Crisil

4.3.8 Total capital expenditure (Capex)

MCL incurred capital expenditure (Capex) of ₹38,398.00 million in Fiscal 2024, which moderated to ₹29,296.10 million in Fiscal 2026. Among domestic peers, CIL reported the highest Capex of ₹196,072.40 million in Fiscal 2026, reflecting its continued investments in capacity expansion, mine development and evacuation infrastructure. NMDC increased its Capex significantly from ₹20,660.00 million in Fiscal 2024 to ₹37,150.00 million in Fiscal 2025. BCCL's Capex increased from ₹12,375.30 million in Fiscal 2024 to ₹16,077.50 million in Fiscal 2026, while MOIL also reported higher capital investments during the period, with Capex rising to ₹3,250.00 million, respectively, in Fiscal 2026. Overall, the capital expenditure trends across domestic peers reflect continued investments towards mine development, capacity augmentation, infrastructure creation and operational efficiency improvements.

Table 4.11 Capex (₹ million) of MCL and other companies

Primary Peers	2024	2025	2026	Q1 FY26 (June-25)	Q1 FY27 (June-26)
MCL	38,398.00	29,075.20	29,296.10	12,498.40	5,811.20
CIL	234,754.10	217,759.90	196,072.40	51,510	42,970
BCCL	12,375.30	18,149.40	16,077.50	1,820.20	4,873.40
NMDC	20,660.00	37,150.00	NA	NA	NA
Other Mining Peers					
GMDC	1,787.00	1,556.00	NA	NA	NA
MOIL	3,161.00	3,219.00	3,250.00	NA	NA
International Peers	**2023**	**2024**	**2025**		
Yancoal Australia	35,152.02	37,537.30	45,212.23	22,697.66	16,537.69
Bukit Asam- Indonesia	10,917.47	12,432.67	24,221.81	NA	NA

Source: Annual Reports FY 24,25,26 and quarterly statement announcement (unaudited for Q1'27) of MCL, CIL, BCCL NMDC, GMDC, MOIL; all years are fiscal year for Indian entities
Note: Capital Expenditure for the respective financial years/ reporting period
Note: International peers values are for FY 23,24,25 (FY refers to 1st Jan to 31st as per respective international reporting standard); FY 26 values are not published yet; for Yancoal values in quarterly column are for H1 2025 and 2026, for Bukit Asam these values are for Q1 2025 and 2026
Note: For international peers values as reported are converted to INR using the currency conversion (as at 31st Dec) for the respective period.
AUD (Australian dollar) to INR: 2023-56.51, 2024-53.24, 2025-60.20, H1 2025-55.77, H1 2026-65.11;
IDR (Indonesian Rupiah) to INR: 2023-0.00542, 2024- 0.00529, 2025- 0.00537, Q1 2025-0.00516, Q1 2026-0.00556

4.3.9 Net asset value (NAV) per equity share

NAV serves as an indicator of the underlying net worth of a company on a per-share basis. Among the domestic peer companies in Fiscal 2026, GMDC reported the highest NAV per equity share of ₹222.54, followed by CIL at 195.22, MOIL at 133.10, NMDC at 38.73, MCL at ₹32.29, and BCCL at ₹12.53. MCL's NAV per equity share increased from ₹24.36 in Fiscal 2024 to ₹32.29 in Fiscal 2026, reflecting growth in its net worth over the period. Overall, most domestic peers reported growth in NAV between Fiscal 2024 and Fiscal 2026, reflecting continued accretion to shareholders' equity and strengthening net worth positions.

Table 4.12 NAV (₹) per equity share of MCL and other companies

Primary Peers	2024	2025	2026	Q1 FY26 (June-25)	Q1 FY27 (June-26)
MCL	24.36	27.72	32.29	31.41	35.91
CIL	139.89	167.72	195.22	NA	NA
BCCL	11.50	14.07	12.53	NA	NA
NMDC	87.27	33.72	38.73	NA	NA
Other Mining Peers					
GMDC	191.82	202.77	222.54	NA	NA
MOIL	120.60	129.60	133.10	NA	NA
International Peers	**2023**	**2024**	**2025**		
Yancoal Australia	361.36	372.06	410.11	371.71	438.21
Bukit Asam- Indonesia	10.10	10.35	10.47	NA	NA

Source: Annual Reports FY 24,25,26 and quarterly statement announcement (unaudited for Q1'27) of MCL, CIL, BCCL NMDC, GMDC, MOIL; all years are fiscal year for Indian entities
Note: Net asset value (NAV) per equity share refers to Net worth as at the end of the year / period divided by number of equity shares outstanding at the end of the financial year. Net Worth is the total equity attributable to equity-holders of the company, as appearing in the Restated Financial Information less OCI - Re-measurement of Defined Benefits Plans (net of Tax) Reserve.
Note: International peers values are for FY 23,24,25 (FY refers to 1st Jan to 31st as per respective international reporting standard); FY 26 values are not published yet; for Yancoal values in quarterly column are for H1 2025 and 2026, for Bukit asam these values are for Q1 2025 and 2026
Note: For international peers values as reported are converted to INR using the currency conversion (as at 31st Dec) for the respective period.
AUD (Australian dollar) to INR: 2023-56.51, 2024-53.24, 2025-60.20, H1 2025-55.77, H1 2026-65.11;

Crisil

IDR (Indonesian Rupiah) to INR: 2023-0.00542, 2024- 0.00529, 2025- 0.00537, Q1 2025-0.00516, Q1 2026-0.00556

4.3.10 Earning per share (EPS)

Among the domestic peer companies in Fiscal 2026, CIL reported the highest EPS of ₹50.46, followed by GMDC at ₹30.08, MCL at ₹16.13, MOIL at ₹13.14, and BCCL at ₹0.28. MCL's EPS moderated from ₹17.89 in Fiscal 2024 to ₹16.13 in Fiscal 2026. CIL's EPS declined from ₹60.69 to ₹50.46, while BCCL's EPS decreased significantly from ₹3.36 to ₹0.28 over the same period. Among international peers, Yancoal Australia reported a decline in EPS from ₹77.88 in Fiscal 2023 to ₹20.05 in Fiscal 2025, Bukit Asam (Indonesia) reported a decline in EPS from ₹2.88 to for ₹1.36 for the same period.

Table 4.13 EPS (₹) of MCL and other companies- Basic as well as Diluted

Primary Peers	2024		2025		2026		Q1 FY26 (June-25)		Q1 FY27 (June-26)	
	Basic	Diluted	Basic	Diluted	Basic	Diluted	Basic	Diluted	Basic	Diluted
MCL	17.89	17.89	16.35	16.35	16.13	16.13	3.70	3.70	3.62	3.62
CIL	60.69	60.69	57.61	57.61	50.46	50.46	14.27	14.27	14.36	14.36
BCCL	3.36	3.36	2.66	2.66	0.28	0.28	0.38	0.38	(0.15)	(0.15)
NMDC	6.34	6.34	7.44	7.44	8.47	8.47	2.24	2.24	2.25	2.25
Other Mining Peers										
GMDC	18.78	18.78	21.38	21.38	30.08	30.08	5.15	5.15	5.14	5.14
MOIL	14.42	14.42	18.76	18.76	13.14	13.14	2.53	2.53	4.31	4.31
International Peers	**2023**		**2024**		**2025**					
Yancoal Australia	77.88	77.88	49.14	49.04	20.11	20.05	6.92	6.92	0.85	0.85
Bukit Asam	2.88	2.88	2.35	2.35	1.36	1.36	0.18	0.18	0.39	0.39

Source: Annual Reports FY 24,25,26 and quarterly statement announcement (unaudited for Q1'27) of MCL, CIL, BCCL NMDC, GMDC, MOIL; all years are fiscal year for Indian entities; quarterly values are not annualized.
Note: Face Values: MCL- ₹2, CIL, ₹10, BCCL- ₹10, NMDC- ₹1, GMDC- ₹2, MOIL ₹10 each
Note: Earnings per share (EPS) equals profit for the year attributable to the shareholders of the company divided by the Weighted average number of Equity Shares outstanding during the year. Since there is no dilutive capital, Basic and Diluted EPS would be same.
Note: International peers values are for FY 23,24,25 (FY refers to 1st Jan to 31st as per respective international reporting standard); FY 26 values are not published yet; for Yancoal values in quarterly column are for H1 2025 and 2026, for Bukit asam these values are for Q1 2025 and 2026
Note: For international peers values as reported are converted to INR using the currency conversion (as at 31st Dec) for the respective period.
AUD (Australian dollar) to INR: 2023-56.51, 2024-53.24, 2025-60.20, H1 2025-55.77, H1 2026-65.11;
IDR (Indonesian Rupiah) to INR: 2023-0.00542, 2024- 0.00529, 2025- 0.00537, Q1 2025-0.00516, Q1 2026-0.00556

Crisil

4.3.11 Trade receivables as number of days of Revenue from operations

Trade receivable days measure the average number of days a company takes to collect payments from its customers and are an indicator of working capital efficiency and credit management practices. Among the domestic peer companies in Fiscal 2026, GMDC reported the lowest trade receivable days of 10 days, followed by CIL at 27 days, MOIL at 35 days, MCL at 41 days, BCCL at 67 days, and NMDC at 105 days. MCL's trade receivable days increased from 22 days in Fiscal 2024 to 41 days in Fiscal 2026. NMDC continued to report comparatively higher collection periods despite an improvement from 118 days in Fiscal 2025 to 105 days in Fiscal 2026. Among international peers, Yancoal Australia reported trade receivable days of 31 days and 33 days in Fiscal 2023 and Fiscal 2025, Bukit Asam (Indonesia) reported trade receivable days of 36 days and 34 days for the same period.

Table 4.14 Trade receivables as number of days of Revenue from operations of MCL and other companies

Primary Peers	2024	2025	2026
MCL	21.95	27.91	40.64
CIL	25.87	21.54	27.09
BCCL	21.53	34.49	67.44
NMDC	60.27	118.25	104.78
Other Mining Peers			
GMDC	15.05	10.88	9.86
MOIL	52.87	33.52	34.80
International Peers	**2023**	**2024**	**2025**
Yancoal Australia	31.07	32.01	32.52
Bukit Asam- Indonesia	36.01	43.05	33.67

Source: Annual Reports FY 24,25,26 and quarterly statement announcement (unaudited for Q1'27) of MCL, CIL, BCCL NMDC, GMDC, MOIL; all years are fiscal year for Indian entities

Note: Trade receivables as number of days of Revenue from operations refers to Trade Receivables on the reporting date (excluding unbilled receivables) as appearing in the Restated Financial Information divided by Revenue from operations multiplied by number of days in the financial year.

Note: International peers values are for FY 23,24,25 (FY refers to 1st Jan to 31st as per respective international reporting standard); FY 26 values are not published yet;

4.4 Operational Benchmarking

4.4.1 Production

MCL stands out as a dominant player in both the domestic and global energy landscapes, producing 100% non-coking coal with output rising from 206.10 MT in Fiscal 2024 to a peak of 225.17 MT in Fiscal 2025 (a 9.3% increase), before moderating to 218.31 MT in Fiscal 2026. In comparison, parent company CIL's overall production peaked at 781.06 MT in Fiscal 2025, while coking-coal-focused BCCL saw its output contract from 41.10 MT in Fiscal 2024 to 35.52 MT by Fiscal 2026. In the wider Indian mineral space, NMDC (Iron Ore) demonstrated robust growth, surging 20.60% to 53.15 MT in Fiscal 2026 (up from 44.10 MT in Fiscal 2025), while GMDC (Lignite) expanded significantly from 6.37 MT in Fiscal 2024 to 8.02 MT in Fiscal 2025 (stabilizing at 7.88 MT in Fiscal 2026), and MOIL (Manganese Ore) maintained a steady output of 1.80–1.91 MT. Globally, MCL's massive non-coking coal scale comfortably outpaced leading international peers in Fiscal 2025, Yancoal Australia (67.00 MT), Bukit Asam (47.19 MT), underscoring its unmatched positioning as a high-volume energy anchor.

Table 4.15 Total production (MT) of MCL and other companies, coal and other minerals as produced

Primary Peers	Mineral	2024	2025	2026	Q1 FY26 (June-25)	Q1 FY27 (June-26)
MCL	Coal	206.10	225.17	218.31	51.58	42.53
CIL	Coal	773.65	781.06	768.19	183.32	169.63
BCCL	Coking Coal	41.10	40.50	35.52	9.04	6.56
NMDC	Iron ore	45.02	44.07	53.15	11.99	15.10
Other Domestic Peers						
GMDC	Lignite	6.37	8.02	7.88	1.98	2.41
MOIL	Manganese Ore	1.76	1.80	1.91	0.50	0.51
International Peers		**2023**	**2024**	**2025**		
Yancoal Australia	Coal	60.20	62.70	67.00	32.20	32.50
Bukit Asam- Indonesia	Coal	41.94	43.28	47.19	NA	NA

Source: Annual Reports FY 24,25,26 and quarterly statement announcement (unaudited for Q1'27) of MCL, CIL, BCCL NMDC, GMDC, MOIL; all years are fiscal year for Indian entities

Note: all values for different minerals are in million tonnes (MT)
Note: International peers values are for FY 23,24,25 (FY refers to 1st Jan to 31st as per respective international reporting standard); FY 26 values are not published yet; for Yancoal values in quarterly column are for H1 2025 and 2026, for Bukit asam these values are for Q1 2025 and 2026

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4.4.2 Mineral dispatch/ Offtake/ Sales

MCL maintains an undisputed leadership in dispatch volumes, with its coal dispatch steadily expanding from 199.02 MT in Fiscal 2024 to 210.46 MT in Fiscal 2025 and further reaching 210.74 MT in Fiscal 2026. Within the domestic CIL peer group, parent company CIL recorded dispatch volumes of 754.07 MT in 2024, peaking at 761.48 MT in 2025 before moderating to 743.49 MT in 2026, while BCCL's volumes experienced a gradual decline from 38.11 MT in 2025 to 32.35 MT in 2026. In the wider Indian mineral space, NMDC (Iron Ore) registered a strong surge in sales to 50.23 MT in 2026 (up from 44.40 MT in 2025), while GMDC (Lignite) sales volumes increased from 6.37 MT in 2024 to 8.02 MT in 2025 (stabilizing at 7.88 MT in 2026), and MOIL (Manganese Ore) maintained a steady sales volume of 1.5–1.6 MT. Internationally, MCL's massive scale stands out amongst the selected coal producing peers in 2025, including Bukit Asam (45.43 MT), Yancoal Australia (38.10 MT), demonstrating its robust operational infrastructure and unmatched market presence

Table 4.16 Total dispatch/ sales (MT) of MCL and other companies, coal and other minerals as produced

Primary Peers	Mineral	2024	2025	2026	Q1 FY26 (June-25)	Q1 FY27 (June-26)
MCL	Coal	199.02	210.46	210.74	51.74	54.80
CIL	Coal	754.07	761.48	743.49	190.56	198.23
BCCL	Coal	NA	38.11	32.35	NA	NA
NMDC	Iron ore	44.48	44.40	50.23	11.51	11.75
Other Mining Peers						
GMDC	Lignite	6.37	8.02	7.88	1.98	2.41
MOIL	Manganese Ore	1.54	1.59	1.59	0.36	0.37
International Companies		**2023**	**2024**	**2025**		
Yancoal Australia	Coal	33.10	37.70	38.10	16.60	19.80

Bukit Asam- Indonesia	Coal	36.97	42.89	45.43	NA	NA

Source: Annual Reports FY 24,25,26 and quarterly statement announcement (unaudited for Q1'27) of MCL, CIL, BCCL NMDC, GMDC, MOIL; all years are fiscal year for Indian entities;
Note: International peers values are for FY 23,24,25 (FY refers to 1st Jan to 31st as per respective international reporting standard); FY 26 values are not published yet; for Yancoal values in quarterly column are for H1 2025 and 2026, for Bukit Asam these values are for Q1 2025 and 2026

Table 4.17 Total dispatch/ sales (MT) as % of total production of MCL and other companies

Primary Peers	Mineral	2024	2025	2026	Q1 FY26 (June-25)	Q1 FY27 (June-26)
MCL	Coal	96.56%	93.46%	96.53%	100.30%	128.85%
CIL	Coal	97.47%	97.49%	96.78%	103.95%	116.86%
BCCL	Coal	NA	94.09%	91.07%	NA	NA
NMDC	Iron ore	98.80%	100.75%	94.51%	96.00%	77.81%
Other Mining Peers						
GMDC	Lignite	100.00%	100.00%	100.00%	100.00%	100.00%
MOIL	Manganese Ore	87.49%	88.06%	83.32%	70.92%	72.70%
International Companies		**2023**	**2024**	**2025**		
Yancoal Australia	Coal	54.98%	60.13%	56.87%	51.55%	60.92%
Bukit Asam- Indonesia	Coal	88.15%	99.10%	96.27%	NA	NA

Source: Annual Reports FY 24,25,26 and quarterly statement announcement (unaudited for Q1'27) of MCL, CIL, BCCL NMDC, GMDC, MOIL; all years are fiscal year for Indian entities;
Note: International peers values are for FY 23,24,25 (FY refers to 1st Jan to 31st as per respective international reporting standard); FY 26 values are not published yet; for Yancoal values in quarterly column are for H1 2025 and 2026, for Bukit asam these values are for Q1 2025 and 2026

Table 4.18 Total coal offtake (MT) and % share of total production for major coal producing companies in India

Primary Peers	2024	2025	2026	Q1 FY26 (June-25)	Q1 FY27 (June-26)
MCL	199.02	210.45	211.35	51.98	54.97
CIL	753.51	762.98	744.83	190.96	197.86
BCCL	39.27	38.25	33.05	8.98	7.72
% share of production					
MCL	96.56%	93.46%	96.81%	100.78%	129.25%
CIL	97.40%	97.69%	96.96%	104.17%	116.64%
BCCL	95.56%	94.44%	93.04%	99.34%	117.68%

Source: Annual Reports FY 24,25,26 and quarterly statement announcement (unaudited for Q1'27) of MCL, CIL, BCCL; all years are fiscal year for Indian entities;
Note: offtake values are not published by other domestic peers and International peers

4.4.3 Over Burden Removal and Stripping Ratio

In terms of overburden removal (OBR) and stripping ratios, parent company CIL consolidated registered a massive OBR of 1,964.14 M.Cum. in Fiscal 2024, peaking at 2,019.50 M.Cum. in Fiscal 2025 (with a stripping ratio of 2.54), before moderating to 1,979.97 M.Cum. (stripping ratio of 2.58) in Fiscal 2026. Among the subsidiaries, MCL demonstrates a highly favorable operational cost structure, maintaining the lowest stripping ratio which rose from 1.34 in 2024 to 1.50 in Fiscal 2025 and 2026, supported by an OBR that peaked at 337.39 M.Cum. in Fiscal 2025 and stood at 327.22 M.Cum. in Fiscal 2026. In contrast, BCCL operates with a significantly higher stripping ratio, which further increased to 4.53 in Fiscal 2026, with its OBR peaking at 182.35 M.Cum. in Fiscal 2025 before declining to 160.92 M.Cum. in Fiscal 2026.

Table 4.19 OBR and Stripping ratio of MCL and other companies

Company	2024	2025	2026	Q1 FY26 (June-25)	Q1 FY27 (June-26)
Stripping Ratio(m3/t)					
MCL	1.34	1.50	1.50	1.64	1.65
CIL	2.54	2.59	2.58	2.77	2.98
BCCL	3.63	4.50	4.53	5.47	5.02
OBR (M.Cum.)					
MCL	276.49	337.39	327.22	84.49	70.21
CIL	1,964.14	2,019.50	1,979.97	508.31	504.68
BCCL	149.28	182.35	160.92	49.45	32.95

Source: Annual Reports FY 24,25,26 and quarterly statement announcement (unaudited for Q1'27) of MCL, CIL, BCCL; all years are fiscal year for Indian entities
Note: OBR is in million cubic meter (M.Cum), and Stripping ratio is derived by OBR / Coal Production (m3/tonne)
Note: OBR and Stripping ratio are not disclosed by Indian Mining entities (NMDC, GMDC, MOIL), as well as international peers (Yancoal. Bukit Asam)

4.4.4 Coal Reserves/ Resources

In terms of geological asset base, MCL holds a commanding position with 40.34 Bt of total coal resources and 9.84 Bt of audited reserves (as of April 1, 2026), representing the largest asset base among all benchmarked subsidiaries and international peers. While parent company CIL's consolidated reserves and resources are not reported in this comparison, MCL's reserves are significantly larger than those of domestic peer BCCL (1.50 Bt reserves / 7.91 Bt resources) and leading global producers, including Bukit Asam (2.88 Bt reserves / 5.71 Bt resources), and Yancoal Australia (0.85 Bt reserves / 4.40 Bt resources). This massive, high-confidence resource base ensures an exceptionally long operational lifespan for MCL.

Table 4.20 Coal Resources and Reserves of MCL and other companies as reported

Company	Unit	Resources	Reserves	Reporting Period
MCL	Bt	40.34	9.84	As on 01.04.2026
CIL	Bt	NA	NA	As on 01.04.2025
BCCL	Bt	7.91	1.50	As on 01.04.2025
International Companies				**Reporting Period**
Yancoal Australia	**Bt**	4.40	0.85	At the end of Fiscal 2025
Bukit Asam- Indonesia	**Bt**	5.71	2.88	At the end of Fiscal 2025

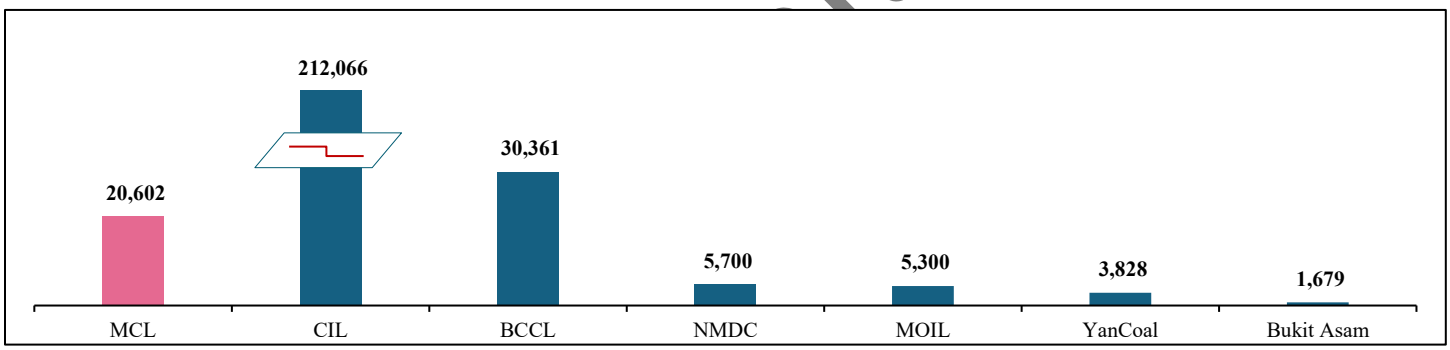
Source: Annual Reports FY 25 and 26 of MCL and DMT audit report of MCL, CIL, BCCL; all years are fiscal year for Indian entities

Note: Resources include (measured, indicated and inferred resources), reserves are recoverable/ mineable reserves (including Proved + probable) as reported by entities in their annual reports. All values are in billion tonnes

4.4.5 Manpower and OMS

Manpower and Output per Man Shift (OMS) are key indicators of workforce productivity and operational efficiency in the mining industry. While manpower reflects the scale of operations, OMS indicates the quantity of coal produced per employee per shift.

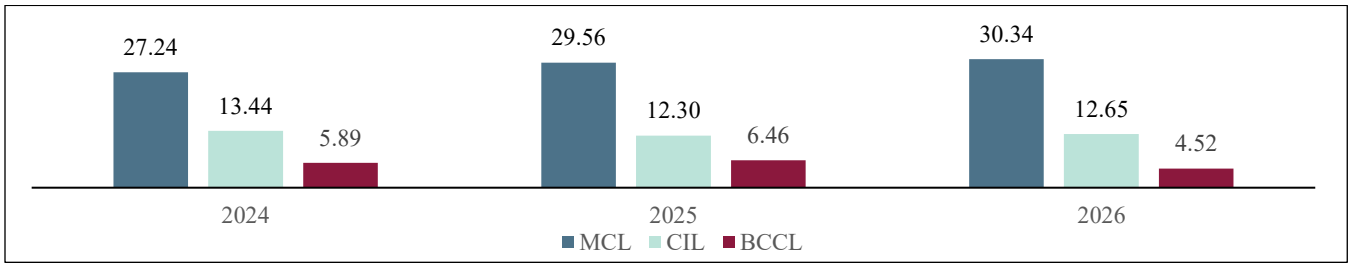
Figure 4.2 Manpower deployed, Fiscal 2026/ 2025



Source: Annual Reports FY 2026 of MCL, CIL, BCCL NMDC, GMDC, MOIL; all years are fiscal year for Indian entities
Note: For International peers figures are for fiscal 2025 as per their respective reporting period.

The total workforce across the benchmarked mining companies stood at 286,980 in Fiscal 2026, heavily dominated by CIL with 212,066 employees (~74% share). Within the CIL group, BCCL deployed 30,361 personnel, while MCL maintained a highly optimized and leaner workforce of 20,602. Among non-coal domestic peers, NMDC and MOIL deployed mid-sized workforces of 5,700 and 5,300, respectively, while international peers operated with smaller, highly specialized workforces led by YanCoal (3,828) and Bukit Asam (1,679), proportionate to their respective production capacity. Despite its leaner workforce, MCL demonstrated world-class labor productivity, leading the CIL group with an Output per Manshift (OMS) that grew steadily from 27.24 tonnes in Fiscal 2024 to 30.34 tonnes in Fiscal 2026. MCL produces approximately 2.4x more coal per employee manshift than the consolidated Coal India Limited average, reflecting its superior operational productivity and efficiency.

Figure 4.3 Output per Manshift (tonnes)



Source: Annual Reports FY 24,25,26 of MCL, CIL, BCCL; all years are fiscal year for Indian entities; OMS are declared by coal mining companies in India, other mining companies (NMDC, GMDC, MOIL) as well as international peers have not declared these values.

4.5 Benchmarking with major CIL subsidiaries

Mahanadi Coalfields Limited ("MCL") operates in a strategically important segment of India's coal industry, with a business model centred on large-scale, predominantly opencast production of non-coking coal for power utilities and industrial consumers. Given the concentration of domestic coal production within Coal India Limited ("CIL") and its subsidiaries, a comparative assessment of MCL against major peer subsidiaries provides an important perspective on its relative scale, operating efficiency, financial strength and market positioning. This benchmarking is intended to highlight MCL's competitive position as a high-volume non-coking coal producer, identify the key drivers of its profitability and cash-generation capability, and assess its relative strengths and areas of improvement vis-à-vis its peer group. In particular, MCL's production scale, cost structure, resource base, customer mix, operational productivity and rail-based evacuation infrastructure are expected to be central considerations in evaluating its long-term business sustainability and market leadership.

4.5.1 Total Revenue from operations

Total revenue is an indicator of the scale of operations and market presence of a company. Among the CIL subsidiaries, MCL reported the highest revenue from operations of ₹313,530.20 million in Fiscal 2025, followed by NCL at ₹253,426.00 million and SECL at ₹ 248,312.00 million. Over Fiscal 2023-2025, revenue performance across the subsidiaries was mixed. While MCL's revenue declined at a CAGR of -6.79%, it retained the largest revenue base within the peer group, supported by its substantial production scale and significant share of domestic non-coking coal supply. CCL recorded relatively stronger revenue growth, with CAGRs of 12.49%, whereas ECL growth rates declined to -0.54%.

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Table 4.21 Total Revenue from operations (₹ million) and CAGR Fiscal 2023-2025 for major CIL Subsidiaries

Company	2023	2024	2025	CAGR% (2023-25)
MCL	360,881.90	316,343.50	313,530.20	(6.79)%
SECL	230,476.00	273,064.00	248,312.00	3.80%
BCCL	151,866.00	163,143.60	159,172.10	2.38%
ECL	152,544.80	145,591.40	150,905.40	(0.54)%
CCL	163,792.00	166,963.50	207,257.40	12.49%
WCL	149,650.10	174,919.90	164,113.40	4.72%
NCL	233,278.50	246,329.00	253,426.00	4.23%

Source: Annual Reports of CIL Subsidiaries; all years are fiscal year

4.5.2 Operating EBIDTA

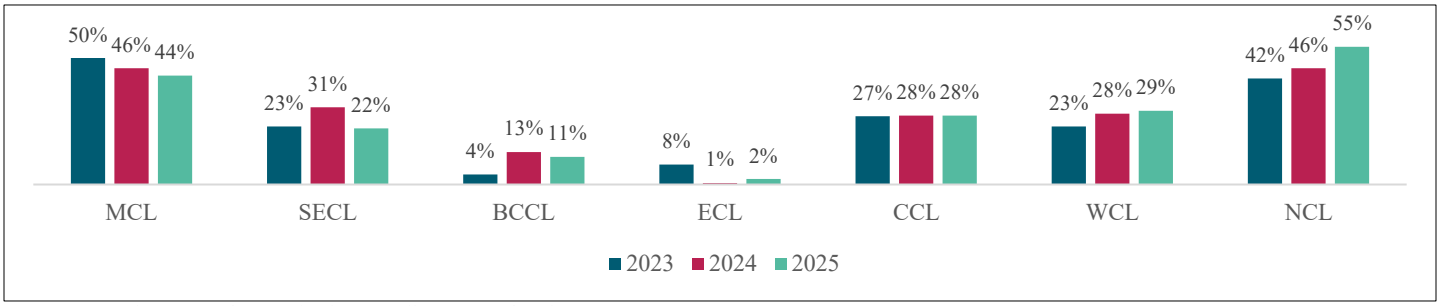
NCL emerged as the leading CIL subsidiary by EBITDA in Fiscal 2025, reporting ₹139354.30 million, ahead of MCL's ₹136,554.80 million. While MCL remained one of the strongest performers, its EBITDA declined from ₹182,178.00 million in Fiscal 2023 to ₹136,554.80 million in Fiscal 2025, resulting in a CAGR of -13.42%. Among peers, BCCL recorded the highest EBITDA growth (CAGR: 88.06%), followed by NCL (18.76%) and WCL (18.01%). Despite the decline, MCL's EBITDA remained significantly higher than that of SECL (₹55,668 million), CCL (₹57,083 million), WCL (₹48,313.40 million), BCCL (₹17,569.80 million), and ECL (₹3,258.40 million) in Fiscal 2025, supported by its large-scale opencast mining operations and strong non-coking coal production base.

Table 4.22 Operating EBITDA (₹ million) and CAGR for Fiscal 2023-2025 for major CIL subsidiaries

Company	2023	2024	2025	CAGR% (2023-25)
MCL	182,178.00	146,809.20	136,554.80	(13.42)%
SECL	53,450.90	84,390.70	55,668.40	2.05%
BCCL	4,968.00	20,872.20	17,569.80	88.06%
ECL	12,057.70	859.00	3,258.40	(48.02)%
CCL	44,638.20	46,045.50	57,082.50	13.08%
WCL	34,693.80	49,560.20	48,313.40	18.01%
NCL	98,811.70	114,421.30	139,354.30	18.76%

Source: Annual Reports of CIL Subsidiaries; all years are fiscal year

Figure 4.4 Operating EBITDA margin (% of Revenue from Operations)



Source: Annual Reports of CIL Subsidiaries; all years are fiscal year

4.5.3 Profit after tax (PAT)

MCL remained the most profitable CIL subsidiary in Fiscal 2025, reporting a PAT of ₹108,251.20 million, despite a decline from ₹134,581.40 million in Fiscal 2023, resulting in a CAGR of -10.31%. Among the peer subsidiaries, WCL recorded the strongest PAT growth (CAGR: 41.08%), followed by BCCL (36.59%) and NCL (16.23%). NCL's PAT increased significantly from ₹71,233.90 million in Fiscal 2023 to ₹96,230.50 million in Fiscal 2025, narrowing the gap with MCL. In contrast, ECL reported the sharpest decline, with PAT decreasing from ₹8,928.00 million to ₹2,044.90 million during the period (CAGR: -52.14%). Despite the moderation in earnings, MCL's PAT remained higher than that of NCL (₹96,230.50 million), BCCL (₹12,401.90 million), CCL (₹40,627.10 million), WCL (₹32,148.20 million), SECL (₹46,487.40 million), and ECL (₹2,044.90 million) in Fiscal 2025.

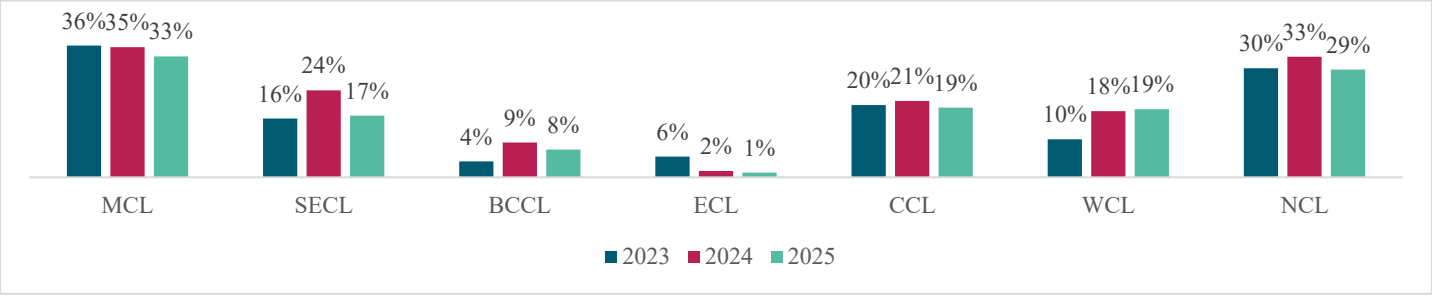
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Table 4.23 PAT (₹ million) of for major CIL subsidiaries

Company	2023	2024	2025	CAGR (2023-25)
MCL	134,581.40	118,415.50	108,251.20	(10.31)%
SECL	38,653.10	69,710.60	46,487.40	9.67%
BCCL	6,647.80	15,644.60	12,401.90	36.59%
ECL	8,928.00	2,515.90	2,044.90	(52.14)%
CCL	33,987.10	36,610.50	40,627.10	9.33%
WCL	16,152.50	32,454.30	32,148.20	41.08%
NCL	71,233.90	83,181.30	96,230.50	16.23%

Source: Annual Reports of CIL Subsidiaries; all years are fiscal year

Figure 4.5 PAT margin (% of total income)



Source: Annual Reports of CIL Subsidiaries; all years are fiscal year

4.5.4 Cost of production

MCL continued to benefit from the lowest cost of production among the major CIL subsidiaries, at ₹785.96 per tonne in Fiscal 2025, reflecting its operational efficiencies and large-scale opencast mining operations. Although MCL's cost of production increased from ₹665.38 per tonne in Fiscal 2023, it remained significantly below the peer-group average. SECL (₹1,150.18 per tonne) and NCL (₹1,267.21 per tonne) were the next lowest-cost producers in Fiscal 2025, while BCCL reported the highest cost of production at ₹3,496.35 per tonne, followed by ECL (₹2,800.51 per tonne). Among peers, WCL recorded a modest decline in cost of production from ₹1,788.37 per tonne in Fiscal 2023 to ₹1,675.32 per tonne in Fiscal 2025, whereas most other subsidiaries witnessed an overall increase in costs. MCL's structurally lower production cost underscores its competitive advantage within the CIL group and supports its strong profitability and cash generation capabilities.

Table 4.24 Cost of production of major CIL subsidiaries (₹/ ton of coal production)

Company	2023	2024	2025
MCL	665.38	822.58	785.96
SECL	1,059.97	1,006.04	1,150.18
BCCL	3,542.31	2,909.52	3,496.35
ECL	3,951.44	2,978.11	2,800.51
CCL	1,566.00	1,405.14	1,715.56
WCL	1,788.37	1,813.84	1,675.32
NCL	1,025.13	968.84	1,267.21

Source: Annual Reports of CIL Subsidiaries; all years are fiscal year
Note: Cost of production is estimated, Total expenses as provided in restated P&L statements less finance cost and depreciation and amortization expenses, divided by total coal production, Values in Rs/ton

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4.5.5 Current ratio

The current ratio indicates a company's ability to meet its short-term obligations using its current assets. Among the CIL subsidiaries, NCL reported the highest current ratio of 2.98 in Fiscal 2025, followed by MCL at 1.95 and SECL at 1.73. MCL maintained a consistently strong liquidity position over Fiscal 2023–2025, with its current ratio remaining close to 2.0x, notwithstanding a marginal moderation from 2.04 in Fiscal 2024 to 1.95 in Fiscal 2025.

SECL and CCL recorded a sustained improvement in liquidity, with their current ratios rising from 1.48 to 1.73 and 1.29 to 1.42, respectively, between Fiscal 2023 and Fiscal 2025. BCCL's ratio improved from 0.96 in Fiscal 2023 to 1.19 in Fiscal 2025, although it remained relatively moderate. In comparison, WCL's current ratio declined from 1.44 to 1.17, while ECL reported the lowest ratio of 0.64 in Fiscal 2025, indicating relatively constrained short-term liquidity. Overall, MCL's healthy current ratio reflects its strong working-capital position and ability to comfortably meet near-term liabilities.

Table 4.25 Current ratio of major CIL subsidiaries

Company	2023	2024	2025
MCL	1.99	2.04	1.95
SECL	1.48	1.70	1.73
BCCL	0.96	1.21	1.19
ECL	0.83	0.73	0.64
CCL	1.29	1.41	1.42
WCL	1.44	1.21	1.17
NCL	2.44	2.32	2.98

Source: Annual Reports of CIL Subsidiaries; all years are fiscal year

4.5.6 Return on average capital employed (RoACE) (%)

MCL continued to lead the CIL subsidiary peer group in terms of RoACE, reporting 83.17% in Fiscal 2025, despite a decline from 176.52% in Fiscal 2023. NCL recorded the second-highest RoACE at 67.91%, followed by WCL (55.54%), CCL (35.07%), SECL (30.68%), and BCCL (30.13%). WCL demonstrated a notable improvement, with RoACE increasing from 73.95% in Fiscal 2023 to 82.22% in Fiscal 2024, before moderating to 55.54% in Fiscal 2025. ECL reported the lowest RoACE at 13.92% in Fiscal 2025. Despite the moderation over the review period, MCL's RoACE remained substantially ahead of its peers, reflecting its strong operational

efficiency and ability to generate superior returns on deployed capital. Overall, MCL's consistently superior RoACE highlights its ability to generate robust returns from deployed capital within the CIL subsidiary peer group.

Table 4.26 RoCE of major CIL subsidiaries

Company	2023	2024	2025
MCL	176.52%	107.04%	83.17%
SECL	52.43%	59.25%	30.68%
BCCL	16.56%	47.20%	30.13%
ECL	54.45%	10.96%	13.92%
CCL	47.95%	38.20%	35.07%
WCL	73.95%	82.22%	55.54%
NCL	99.67%	79.56%	67.91%

Source: Annual Reports of CIL Subsidiaries; all years are fiscal year

4.5.7 Return on net worth (%)

Return on Net Worth (RoNW) measures a company's ability to generate profit from shareholders' funds. MCL continued to report the highest RoNW among the major CIL subsidiaries, at 62.82% in Fiscal 2025, despite moderating from 125.05% in Fiscal 2023 and 80.56% in Fiscal 2024. NCL ranked second with a RoNW of 50.35%, followed by WCL (41.08%). While most subsidiaries witnessed a decline in returns over the review period, NCL and WCL continued to maintain strong profitability metrics. SECL's RoNW declined sharply from 61.65% in Fiscal 2024 to 29.77% in Fiscal 2025, while CCL and BCCL reported RoNW of 26.93% and 20.83%, respectively. ECL recorded the lowest RONW at 6.54% in Fiscal 2025, continuing its downward trend from 38.94% in Fiscal 2023. Despite the moderation, MCL's consistently superior RoNW underscores its strong earnings-generating capability and efficient utilization of shareholders' funds relative to its peers.

Table 4.27 Return on net worth (RoNW) of MCL and other major CIL subsidiaries

Company	2023	2024	2025
MCL	125.05%	80.56%	62.82%
SECL	88.62%	61.65%	29.77%
BCCL	18.57%	34.21%	20.83%
ECL	38.94%	8.71%	6.54%
CCL	35.30%	30.02%	26.93%
WCL	70.04%	67.57%	41.08%
NCL	74.16%	60.44%	50.35%

Source: Annual Reports of CIL Subsidiaries; all years are fiscal year

4.5.8 Dividend income received by CIL

MCL has consistently been the largest contributor to Coal India Limited's dividend income, reflecting its strong profitability, cash generation capability and capital allocation approach. During Fiscal 2023 to 2025, MCL contributed dividend income of ₹84,250.00 million, ₹90,000.00 million and ₹86,000.00 million, respectively, substantially higher than all other CIL subsidiaries. In Fiscal 2025, MCL's dividend share was more than double that of NCL (₹37,023.60 million) and significantly higher than SECL (₹20,916.80 million) and CCL (₹10,998.00 million). MCL's sustained leadership in dividend payments highlights its strategic importance within the CIL group and its ability to consistently generate surplus cash for shareholder distribution.

Table 4.28 Dividend income received by CIL from its major subsidiaries (₹ million)

Company	2023	2024	2025
MCL	84,250.00	90,000.00	86,000.00
SECL	10,635.40	7,495.50	20,916.80
BCCL	--	--	444.30
ECL	--	--	--
CCL	10,236.60	10,236.60	10,998.00
WCL	--	--	4,997.20
NCL	36,594.60	41,957.60	37,023.60

Source: Annual Reports of CIL FY 2023, 2024, 2025; all years are fiscal year

4.5.9 Coal Production

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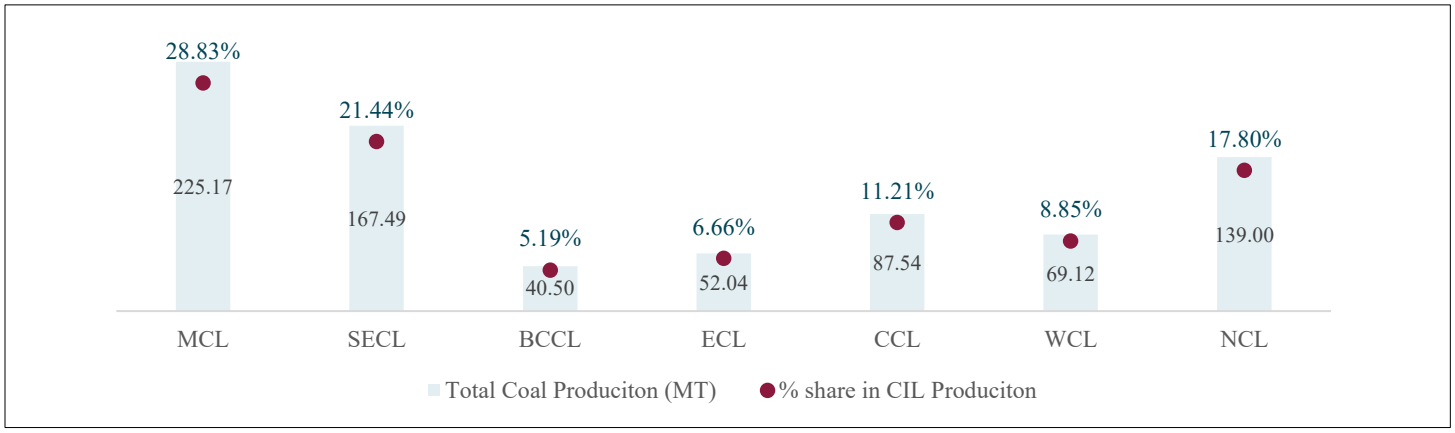
Among CIL subsidiaries, MCL was the largest coal producer in Fiscal 2025, with production of 225.2 MT, accounting for approximately 28.8% of CIL's total production. SECL was the second-largest producer at 167.5 MT (21.4%), followed by NCL at 139.0 MT (17.8%). Together, MCL, SECL and NCL contributed approximately 68.0% of CIL's coal production, highlighting the concentration of CIL's production base among these three subsidiaries. CCL and WCL produced 87.5 MT and 69.1 MT, respectively, while ECL and BCCL recorded production of 52.0 MT and 40.5 MT, respectively. MCL's leadership reflects its large-scale, predominantly opencast non-coking coal operations in the Talcher and IB Valley coalfields of Odisha.

Table 4.29 Total coal production of major CIL subsidiaries

Company	2023	2024	2025	CAGR (2023-25)
MCL	193.26	206.10	225.17	7.94%
SECL	167.01	187.38	167.49	0.14%
BCCL	36.18	41.10	40.50	5.81%
ECL	35.02	47.56	52.04	21.90%
CCL	76.09	86.05	87.54	7.26%
WCL	64.28	69.11	69.12	3.69%
NCL	131.17	136.15	139.00	2.94%

Source: Annual Reports of CIL Subsidiaries; CIL annual report FY 2025 and 2026 all years are fiscal year

Figure 4.6 Major subsidiary wise total Coal production (% share of CIL's total coal production), Fiscal 2025



Source: Annual Reports of CIL Subsidiaries; CIL annual report FY 2025 and 2026 all years are fiscal year

4.5.10 Coal offtake

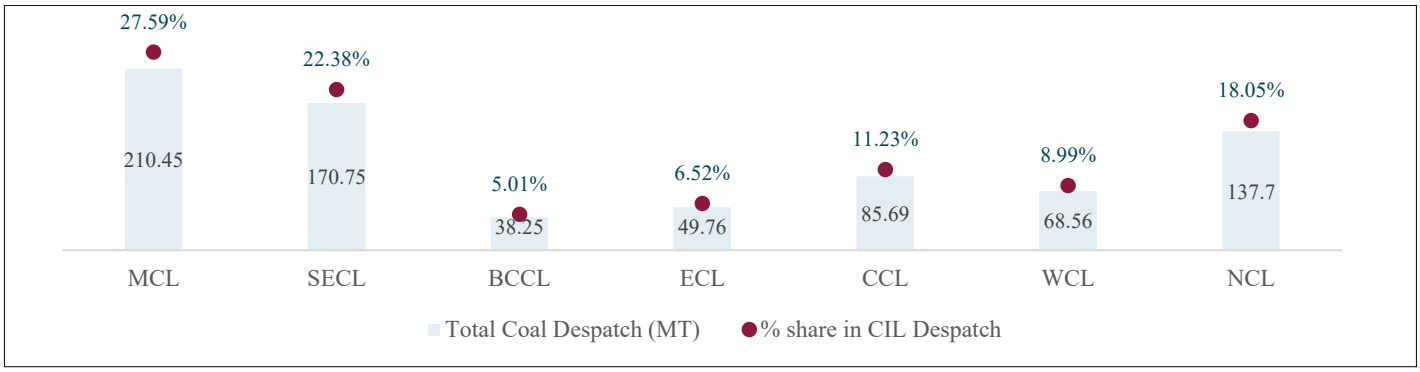
MCL recorded the highest coal dispatch among the CIL subsidiaries, increasing from 192.75 MT in Fiscal 2023 to 210.45 MT in Fiscal 2025, demonstrating its strong production capability and efficient coal evacuation infrastructure. SECL reported dispatch of 170.75 MT in Fiscal 2025, lower than its Fiscal 2024 dispatch of 180.59 MT. NCL reported dispatch of 137.70 MT in Fiscal 2025, which were maintained at Fiscal 2024 level. Overall, MCL maintained its leadership position in coal dispatch, supported by its large-scale mining operations and robust transportation and logistics network.

Table 4.30 Total coal offtake for major CIL subsidiaries

Company	2023	2024	2025	CAGR (2023-25)
MCL	192.75	199.02	210.45	4.49%
SECL	160.04	180.59	170.75	3.29%
BCCL	35.53	39.27	38.25	3.76%
ECL	35.51	43.75	49.76	18.38%
CCL	75.03	82.81	85.69	6.87%
WCL	62.15	70.24	68.56	5.03%
NCL	133.51	137.63	137.70	1.56%

Source: Annual Reports of CIL Subsidiaries; all years are fiscal year

Figure 4.7 Major subsidiary wise total coal offtake (% share of CIL's consolidated offtake), Fiscal 2025



Source: Annual Reports of CIL Subsidiaries; CIL annual report FY 2025 and 2026 all years are fiscal year

4.5.11 Over Burden Removal and Stripping Ratio

Amongst the CIL subsidiaries NCL and WCL recorded the highest Overburden Removal (OBR) in Fiscal 2025 at 467.9 and 368.9 M.Cum., followed closely by SECL at 354.64 M.Cum. and MCL at 337.39 M.Cum., reflecting the large scale of mining operations undertaken by these organizations. While MCL's OBR increased significantly over the three-year period, its stripping ratio remained second lowest (1.50 m3/t) amongst the CIL subsidiaries following that of CCL at 1.35 m3/t.

Among the CIL subsidiaries, WCL reported the highest stripping ratio, reflecting the characteristics of its coal mining operations. Overall, MCL maintained a favorable balance between overburden removal and stripping ratio, supporting efficient coal extraction and cost-effective mining operations.

Table 4.31 OBR and stripping ratio of major CIL subsidiaries

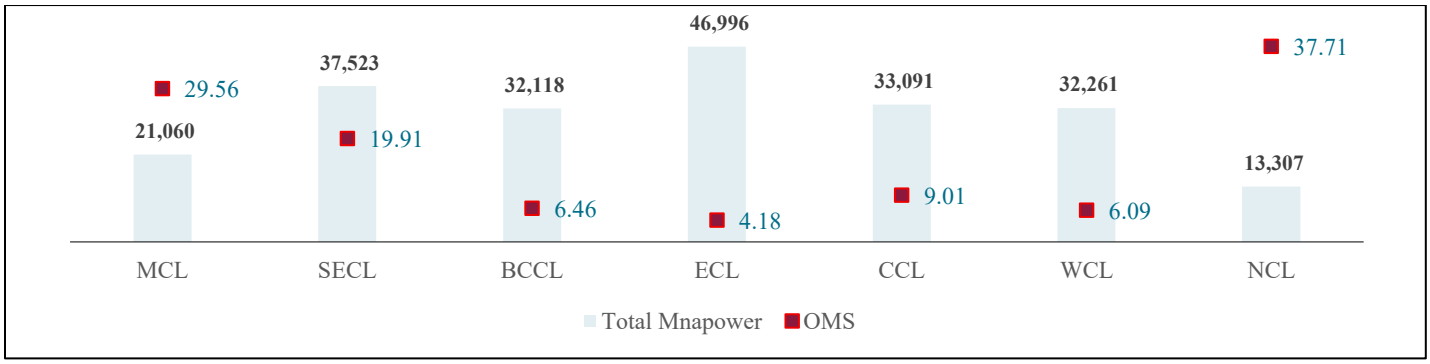
Company	2023	2024	2025
Stripping Ratio (m3/t)			
MCL	1.27	1.34	1.50
SECL	1.58	1.71	2.12
BCCL	3.16	3.72	4.50
ECL	3.80	3.58	3.60
CCL	1.40	1.41	1.35
WCL	5.07	5.90	5.34
NCL	3.56	3.76	3.37
OBR (M.Cum.)			
MCL	245.96	276.49	337.39
SECL	263.39	321.19	354.64
BCCL	114.47	152.86	182.35
ECL	133.13	170.28	187.17
CCL	106.58	121.33	118.35
WCL	325.61	407.69	368.91
NCL	467.53	511.87	467.90

Source: Annual Reports of CIL; all years are fiscal year

4.5.12 Manpower and OMS

Manpower and Output per Man Shift (OMS) are key indicators of workforce productivity and operational efficiency in the mining industry. While manpower reflects the scale of operations, OMS indicates the quantity of coal produced per employee per shift. MCL's output per man-shift in Fiscal 2025 stood at 29.56 tonnes, significantly higher than 19.91 tonnes for South Eastern Coalfields Limited (SECL), our closest domestic peer/ competitor in terms of coal production.

Figure 4.8 Manpower deployed and OMS of major CIL subsidiaries, Fiscal 2025



Source: Annual Report of CIL subsidiaries FY 2024-25

While ECL, SECL and WCL are major employers amongst CIL subsidiaries. Despite having a lower workforce, NCL, MCL recorded significantly higher OMS throughout the period under review. MCL's OMS improved from 28.78 tonnes in Fiscal 2024 to 29.56 tonnes in Fiscal 2025, highlighting strong workforce productivity and operational efficiency. MCL's presence in region with skilled workforce and established supply chains enables them to optimize its operational activities and reduce overhead costs.

4.6 Diversification and future ready initiatives

The energy and mining sector is undergoing significant transformation from traditional business models toward diversified, sustainable, and technology-driven operations. Companies are increasingly investing in renewable energy, green technologies, logistics infrastructure, and digital transformation to strengthen long-term competitiveness and align with national sustainability goals. An assessment of MCL and selected peer organizations highlights the different approaches adopted to expand business portfolios and prepare for future industry developments.

Table 4.32 Diversification of operations across different companies

Company	Core Business	Key Diversification Areas
MCL	Coal Mining	Coal evacuation infrastructure, First Mile Connectivity (FMC), mine mechanization, sustainable mining initiatives
CIL	Coal Mining	Solar power projects, coal gasification, critical minerals, coal beneficiation, railway infrastructure, First Mile Connectivity projects, battery energy storage systems and CBM initiatives
BCCL	Coal Mining	Rooftop solar projects, CBM production, modernization of old washeries
NMDC	Iron Ore Mining	Critical minerals exploration, coal mining, pelletization, renewable energy, slurry pipelines, international mining operations and digital transformation initiatives
GMDC	Lignite Mining & Power Generation	Renewable energy, Critical mineral (REEs) mining and processing, Bauxite and silica sand mining and processing, industrial minerals, power generation, mine modernization
MOIL	Manganese ore Mining	Renewable energy, mineral exploration, beneficiation, digital mining, mine mechanization, Mine mechanization, automation of underground hoisting, and R&D-driven mineral development.

Source: Annual reports of various MCL, CIL, BCCL, NMDC, GMDC, MOIL; Crisil intelligence

Diversification initiative analysis

The comparison highlights distinct diversification strategies among the selected companies. MCL and SECL continue to focus primarily on coal mining while gradually expanding into infrastructure development, coal evacuation systems, and sustainability-related initiatives. SECL has diversified further through investments in solar power generation, railway infrastructure, green ammonia, and coal gasification projects. During Fiscal 2025, SECL commissioned a 20 MW solar photovoltaic plant at Bhatgaon, operationalized rooftop solar installations of 580 kWp, and initiated additional rooftop solar projects while also exploring green ammonia and coal gasification opportunities.

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NMDC represents one of the most diversified mining enterprises among the selected companies. While maintaining its leadership position in iron ore mining, the company has expanded into critical minerals exploration, coal mining, pelletization facilities, renewable energy projects, slurry pipeline infrastructure and international mining operations. Through its Vision 2030 strategy, NMDC is pursuing large-scale capacity expansion and resource diversification to support future growth and long-term sustainability.

GMDC has evolved beyond traditional lignite mining by adopting a diversified mining and energy model. The company has expanded into renewable energy generation, bauxite mining, industrial minerals, power generation and mine modernization initiatives. Development of the Ambadungar mine and the establishment of a dedicated Rare Earth Elements (REE) separation hub at Bharuch is also one priority project. Its investments in wind and solar energy, alongside digital mining practices and sustainable resource management initiatives, strengthen operational resilience and reduce dependence on a single commodity.

MOIL has primarily focused on strengthening and modernizing its core manganese ore business through extensive mineral exploration, beneficiation projects, resource expansion and mine mechanization. The company has also undertaken initiatives in renewable energy adoption and digital mining technologies to improve operational efficiency and support long-term sustainability. Record exploratory drilling and continuous resource augmentation remain central to MOIL's diversification and growth strategy.

Among the selected companies, NMDC exhibits one of the highest levels of diversification through its presence across multiple minerals, renewable energy initiatives, logistics infrastructure and international mining ventures. CIL has adopted a comprehensive diversification strategy focused on clean energy, critical minerals and coal value addition. GMDC has successfully developed an integrated mining and energy business model through renewable energy and mineral diversification, while MOIL continues to strengthen its future readiness through exploration, technological modernization and renewable energy adoption. In comparison, MCL and BCCL remain largely focused on coal mining operations, with diversification efforts concentrated on infrastructure development, operational efficiency and sustainability-oriented initiatives. Going forward, investments in renewable energy, critical minerals, digital mining technologies and low-carbon solutions are expected to play a crucial role in enhancing the long-term competitiveness and sustainability of these organizations.

4.7 Environmental (E), Social (S), Governance (G) parameters

Table 4.33 ESG initiatives

Company	Environment (E)	Social (S)	Governance (G)
MCL	• 50 MW solar plant + 2.5 MW rooftop solar across 46 sites. • 99.4% of coal production is through eco-friendly Surface Miners. • 270.3 ha plantation and mine reclamation initiatives.	• ₹3759.0 million CSR expenditure focused on healthcare, education and sanitation. • Community development in mining-affected areas. • Local entrepreneurship support through MSME promotion.	• Rated "Excellent" in Corporate Governance by DPE. • Dedicated CSR & Sustainable Development and Risk Management Committees. • Inclusive procurement targets for MSEs, SC/ST and women entrepreneurs.
CIL	• Renewable energy initiatives including solar projects and clean energy investments. • Large-scale afforestation, mine reclamation and biodiversity management programmes. • First Mile Connectivity (FMC) projects aimed at improving coal transportation efficiency and reducing transportation-related environmental impacts.	• CSR expenditure of ₹1565.7 million crore at CIL Headquarters and ₹9632.7 million at consolidated level. • Extensive CSR initiatives focused on healthcare, education, skill development, livelihood generation, sanitation and rural development. • Community development programmes across coal-bearing and mining-affected regions.	• Strong corporate governance framework supported by Board-level committees, including CSR and Risk Management Committees. • Enterprise Risk Management (ERM) framework for identification, assessment and mitigation of strategic and operational risks. • Compliance with SEBI regulations, DPE guidelines, vigilance mechanisms and whistleblower policies.

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Company	Environment (E)	Social (S)	Governance (G)
BCCL	• Under green credit program booked 200 ha. Of land for plantation in Bihar and Jharkhand • 25 MW solar project at the Bhojudih Coal Washery • Intensified bio-reclamation of degraded mined-out lands, ecological restoration of overburden (OB) dumps, and plantation drives	• ₹286.7 million CSR spending. • Skill development institutes and training centers near mining regions • Science center labs	• Guided by an official Code of Business Conduct and Ethics for board members and senior management. • Strict adherence to public sector vigilance protocols and anti-bribery measures.
NMDC	• Net-zero transition efforts through renewable energy adoption. • 1.87 million saplings planted and extensive green belt development. • Zero Liquid Discharge systems and water conservation measures.	• ₹1911.4 million CSR expenditure. • Investments in healthcare, education, infrastructure and skill development. • Strong employee safety and community welfare programmes.	• Comprehensive risk management and internal control systems. • Regular audits and governance reviews. • ESG integration into strategic planning and decision-making.
GMDC	• 200.9 MW wind power capacity and 5 MW solar power capacity supporting renewable energy generation. • 98,118 saplings planted across 84.75 hectares during Fiscal 2025. • Mine reclamation, biodiversity conservation, water management and environmental monitoring initiatives.	• ₹785.9 million CSR expenditure focused on healthcare, education, livelihood development and rural infrastructure. • Welfare initiatives for local communities in mining regions.	• Robust governance framework supported by Board committees. • Risk management and regulatory compliance systems. • Transparent disclosure and accountability practices.
MOIL	• Renewable energy initiatives including solar and wind energy utilization. • Plantation, environmental conservation and sustainable mining initiatives. • Energy efficiency and mine modernization programmes.	• ₹82.6 million CSR expenditure on healthcare, education and women empowerment. • Community development and rural welfare programmes.	• Strong corporate governance framework with Board oversight. • Compliance with SEBI and Government of India guidelines. • Transparent audit and compliance systems.

Source: Annual reports of MCL, CIL, BCCL, NMDC, GMDC, MOIL

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